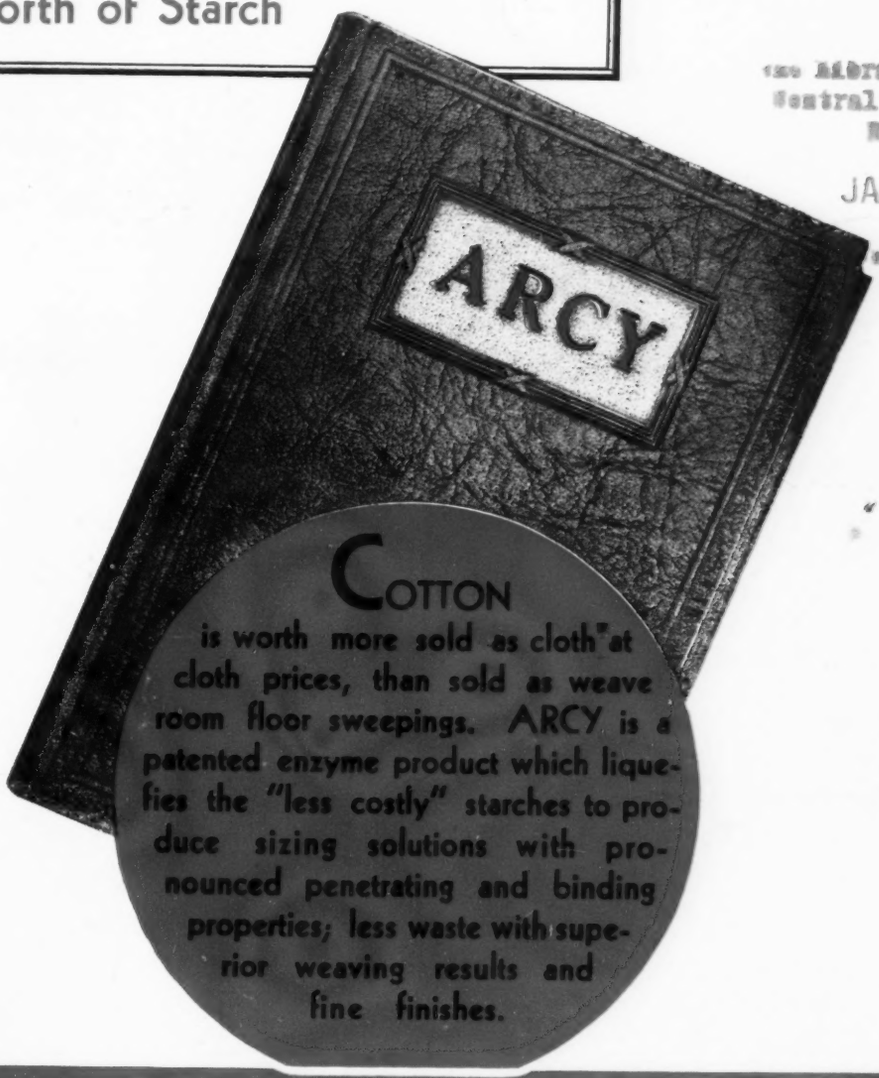
COTTON

JAN. SERVING THE 1943

Textile Industries

A Way to Get the Most Value from a Dollar's Worth of Starch



COTTON is worth more sold as cloth at cloth prices, than sold as weave room floor sweepings. ARCY is a patented enzyme product which liquefies the "less costly" starches to produce sizing solutions with pronounced penetrating and binding properties; less waste with superior weaving results and fine finishes.

Write for Your Copy of this Story Today!

DRAKE CORPORATION

NORFOLK, VIRGINIA

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What IS the "Improved" Way of Doing Business?

The "usual" way of doing business requires extending terms of 30, 60 or 90 days to your trade. Your customer naturally wants the use of your money for the customary period of time. This is the "usual", but not always the "improved" way of doing business.

Instead of tying-up working capital in accounts receivable, it is both possible and practical to receive cash as goods are shipped. Your customer gets his regular terms and you get immediate cash through Commercial factoring. Besides, it eliminates credit losses, collection expense and reduces bookkeeping costs.

Why not learn more about this "improved" way of doing business? Write Commercial Factors today!

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Fred'k Vietor & Achelis, Inc.
Established 1828

Schefer, Schramm & Vogel
Established 1838

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Established 1893

TWO PARK AVENUE, NEW YORK

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Volume 107. No. 1.

Draper Research

Has Produced

A Laminated Dogwood Shuttle

That is Proving as Good as
the One-Piece Dogwood Shuttles
You Are Now Using

It was designed to meet the Needs of our Mills that are threatened with a Handicap to their War Efforts by a Shortage of Dogwood.

Because Winning the War calls for Co-operation and Because Good Shuttles are Necessary in the Weaving of Fabrics Needed by Our Armed Forces, we are reserving to ourselves no special rights to this Shuttle.

We Offer It

to the Industry
to All Shuttle-Makers

If it proves the solution of the impending problem and helps the Textile Industry in its War Effort, we will be amply repaid.

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ALL OUT ON WAR PRODUCTION, high speed machinery in this modern mill gets the finest "life" insurance obtainable. It is lubricated 100% with TEXACO.

COOLER RUNNING comb-boxes, new freedom from oil throw, reduced stock spoilage, fewer lubrications, does not separate in the face of long, continuous churning . . . these are proven results of lubricating with *Texaco Stazon.*

Texaco Stazon stays on loom cranks, top rolls of roving and spinning frames. Resists thinning out, creeping and splattering.

The outstanding performance that has made Texaco preferred in the fields listed in the panel has made it preferred by prominent mills in every textile area.

These Texaco users enjoy many benefits that can also be yours. A Texaco Lubrication Engineer will gladly cooperate . . . just phone the nearest of more than 2300 Texaco distributing points in the 48 States, or write:

The Texas Company, 135 East 42nd Street, New York, N. Y.

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★ More stationary Diesel horsepower in the U. S. is lubricated with Texaco than with any other brand.

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★ More buses, more bus lines and more bus-miles are lubricated with Texaco than with any other brand.

TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

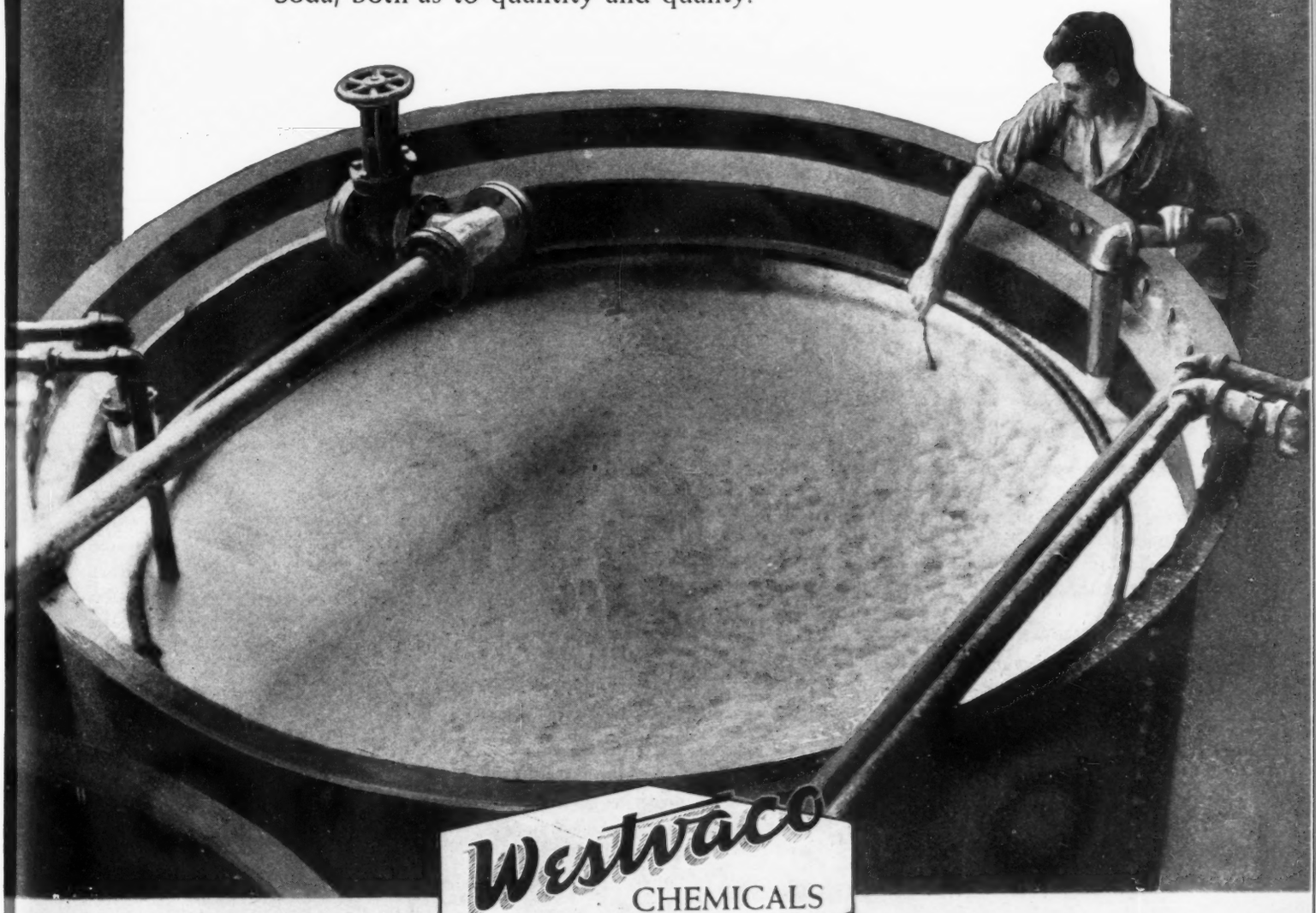
TUNE IN FRED ALLEN EVERY SUNDAY NIGHT—CBS ★ HELP WIN THE WAR BY RETURNING EMPTY DRUMS PROMPTLY

These are the war-time facts about WESTVACO CAUSTIC SODA

As one of America's important chlorine producers, Westvaco is operating at maximum capacity for the war effort.

Co-product is Westvaco Caustic Soda.

With continued peak production of Westvaco Chlorine, we have every reason to believe that we can provide the full requirements of old and new users of Westvaco Caustic Soda, both as to quantity and quality.



Westvaco CHEMICALS

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING • NEW YORK, N. Y.

Chicago, Ill. Greenville, S. C. Newark, Calif.

By the Hundreds

AMERICA'S LARGEST PLANTS

ADOPT G.T.M. INDUSTRIAL RUBBER CONSERVATION PLAN

Key executives acclaim Goodyear-developed procedure that can prolong life of rubber products as much as 50%. Get your plant started now. No charge.

With this 40-page manual, "Goodyear Industrial Rubber Products Conservation," your men have complete instructions for salvaging rubber products. It's furnished free—to designated operating men.

IN a few short weeks the Goodyear Rubber Products Conservation Plan has become American industry's first line of defense against the rubber shortage.

More than a thousand top operating men from major manufacturing companies have enthusiastically endorsed the plan, at meetings held, in fifty cities from coast to coast, by the G. T. M. — Goodyear Technical Man.

So impressed have they been by its rubber-saving possibilities, many asked the G.T.M. to come into their plants and explain the program in detail to the mechanical staffs. Upwards of 200 of these individual plant meetings have now been held, and many more are scheduled.

That is the verdict of industry on the Goodyear plan — a practical program for conserving your now almost irreplaceable rubber products and prolonging their life many extra months.

AVAILABLE TO ALL

The Goodyear conservation program consists of three simple, easy-to-follow steps:

"Goodyear Wages War on Waste"— a graphic, educational slide film which illustrates to your men, plainly and clearly, recommended conservation practices.

Practical plant demonstrations by the G.T.M. —what to look for, how to inspect and what measures to take to give hose, belts and other products longer life.

"Goodyear Industrial Rubber Products Conservation" manual—a fully illustrated 40-page book, telling exactly how to make repairs, and filled with suggestions for saving rubber — left with your operating men for their guidance.

HOW TO GET THE PROGRAM

To have the G.T.M. hold a rubber conservation meeting at your plant, simply write us today, and a definite date will be set.

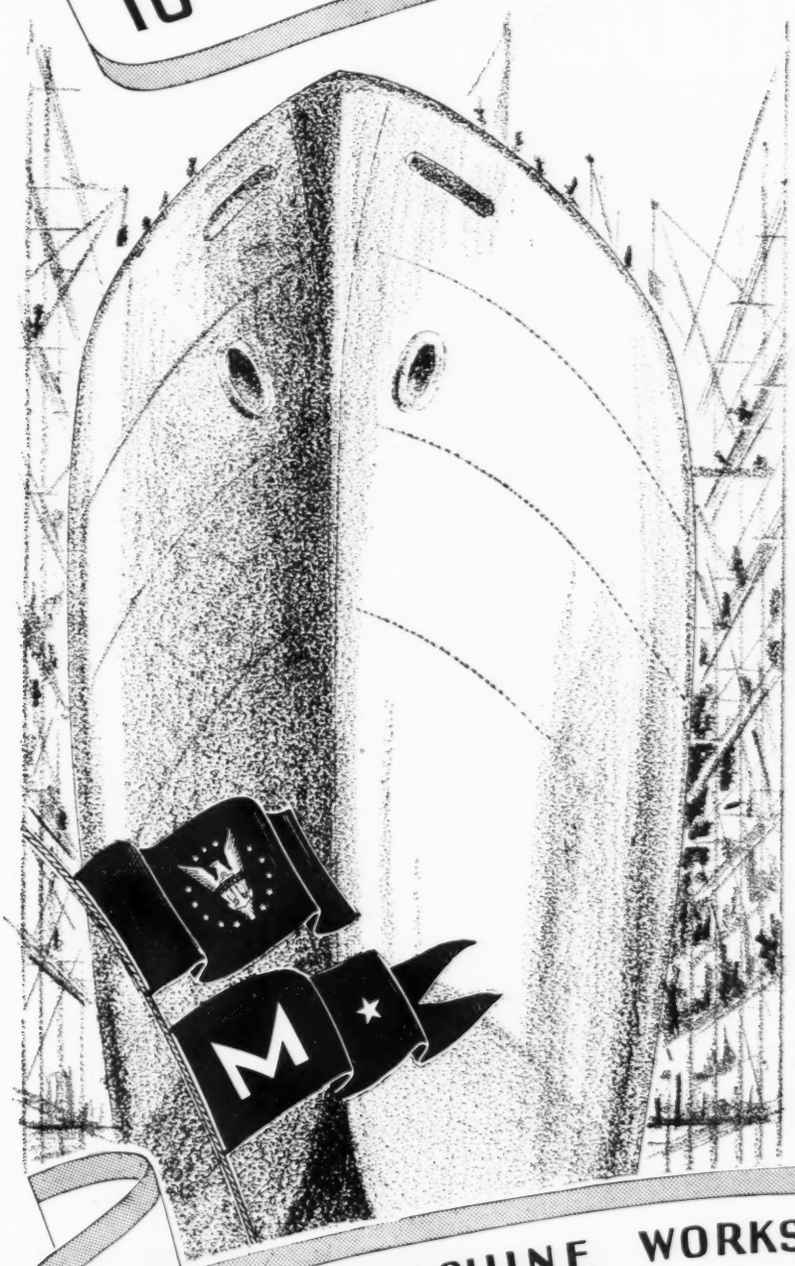
There is no charge for this service; it is not necessary that you be a Goodyear customer — it is all part of Goodyear's effort to help the nation save rubber. To arrange for your meeting, or obtain copy of the manual, write: Goodyear, Industrial Conservation Dept. E-3, Akron, Ohio.

GOODYEAR
MECHANICAL GOODS

THE GREATEST NAME IN RUBBER

The WHITIN MACHINE WORKS
Gives its Heartfelt Thanks

TO YOU IN THE TEXTILE *BUSINESS*



You have helped to make it possible for us to do our part in the Victory program of our Country and our Allies by giving up the purchase of new machinery. We are now making vital equipment for the famous

"Liberty Ships"

and numerous other war materials. Whitin engineering, which has always been ahead in design and equipment, is now all out for Victory, but after the war we will be with you again . . . ready, willing and able. In the meantime our repair and replacement departments are working full time and our Textile Research Division is planning Now for Then.

WHITIN MACHINE WORKS, Whitinsville, Mass.

You Have A Choice When You Use

Ahcopel

OTHER

AHCO PRODUCTS

Ahcovel Substantive Softener

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Ahcowet-SM Wetting Out Agent

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Resynon Finishing Compounds

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Sizing and Printing Gums

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Heavy Chemicals

One formula does not fit all water repellent requirements any more than one suit of clothes fits all men. That's why we give you a CHOICE of formulas, when you use Ahcopel.

★

If desired, we make the emulsion mildew resistant, to Government specifications. The degree of water repellency can also be regulated to needs.

★

The wide adaptability and the efficiency of Ahcopel are due to our long experience in this field. Ahcopel was one of the first water repellents developed in this country.

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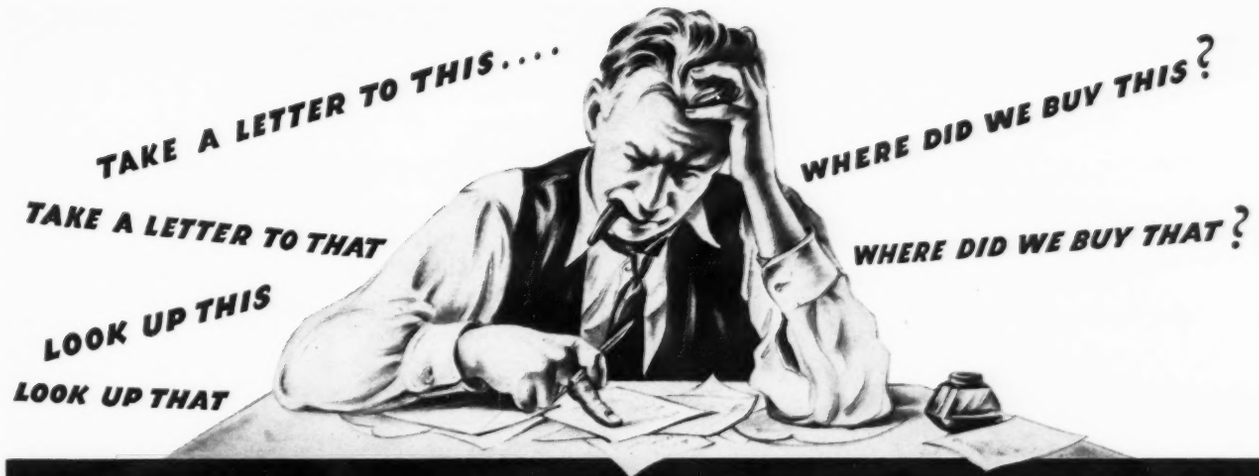
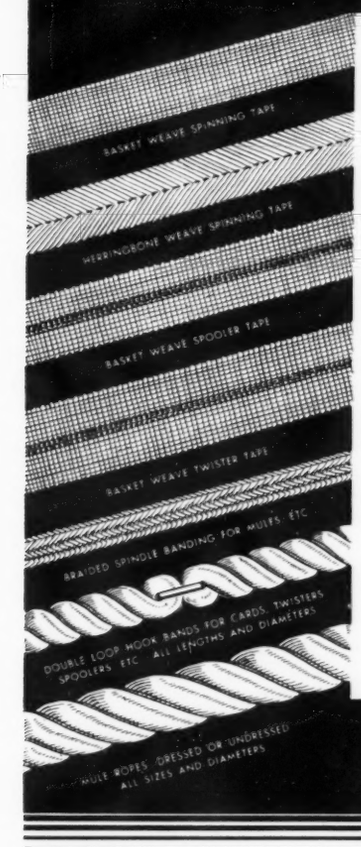
Established 1815 **PROVIDENCE, RHODE ISLAND** Plant at Dighton, Mass.

NEW YORK ★ BOSTON ★ PHILADELPHIA ★ CHARLOTTE



Are You Troubled with "BUYING DISPERSION?"


BASKET WEAVE SPINNING TAPE
HERRINGBONE WEAVE SPINNING TAPE
BASKET WEAVE SPOOLER TAPE
BASKET WEAVE TWISTER TAPE
BRAIDED SPINDLE BANDING FOR MULES ETC.
DOUBLE LOOP HOOK BANDS FOR CARDS, TWISTERS SPOOLERS ETC. ALL LENGTHS AND DIAMETERS
MULE ROPES DRESSED OR UNDRESSED ALL SIZES AND DIAMETERS

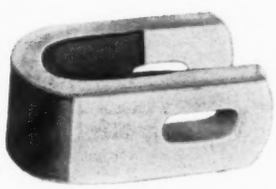
"BUYING DISPERSION" is having too many sources of supply. It unnecessarily multiplies interviews, correspondence, orders, invoices and clerical work, divides responsibility, and destroys the interest of suppliers. Some dispersion is unavoidable, even advisable, but CONCENTRATION will pay you bigger dividends, when the supplier is worthy of your confidence.

Concentration creates a relationship that is mutually profitable. It promotes personal contacts which inspire confidence. The buyer can "let down his guard" and the supplier is eager to serve,—to merit the faith placed in him.

No need to "disperse", when buying spinning tape, braided or twisted banding, and rope (for preparatory, spinning, or twisting machinery), and canvas lug straps for the weaving. You can safely concentrate your purchases of all these products with Lambeth. In 1892 (50 years ago), soon after this company was founded, we received a medal of merit at the Chicago World's Fair and the same product quality that earned us that medal has been maintained throughout the years. Lambeth Products are made only one way,—the best way with the best materials.

"BILTRITE" CANVAS LUG STRAP

PATENTED



This new product is an outstanding example of Lambeth quality. It's built up and molded in one continuous operation. The glue has no chance to set before the molding is completed. Longer life results.

When you think of preparation, spinning, or weaving, think of–

LAMBETH ROPE CORPORATION

NEW BEDFORD · MASSACHUSETTS

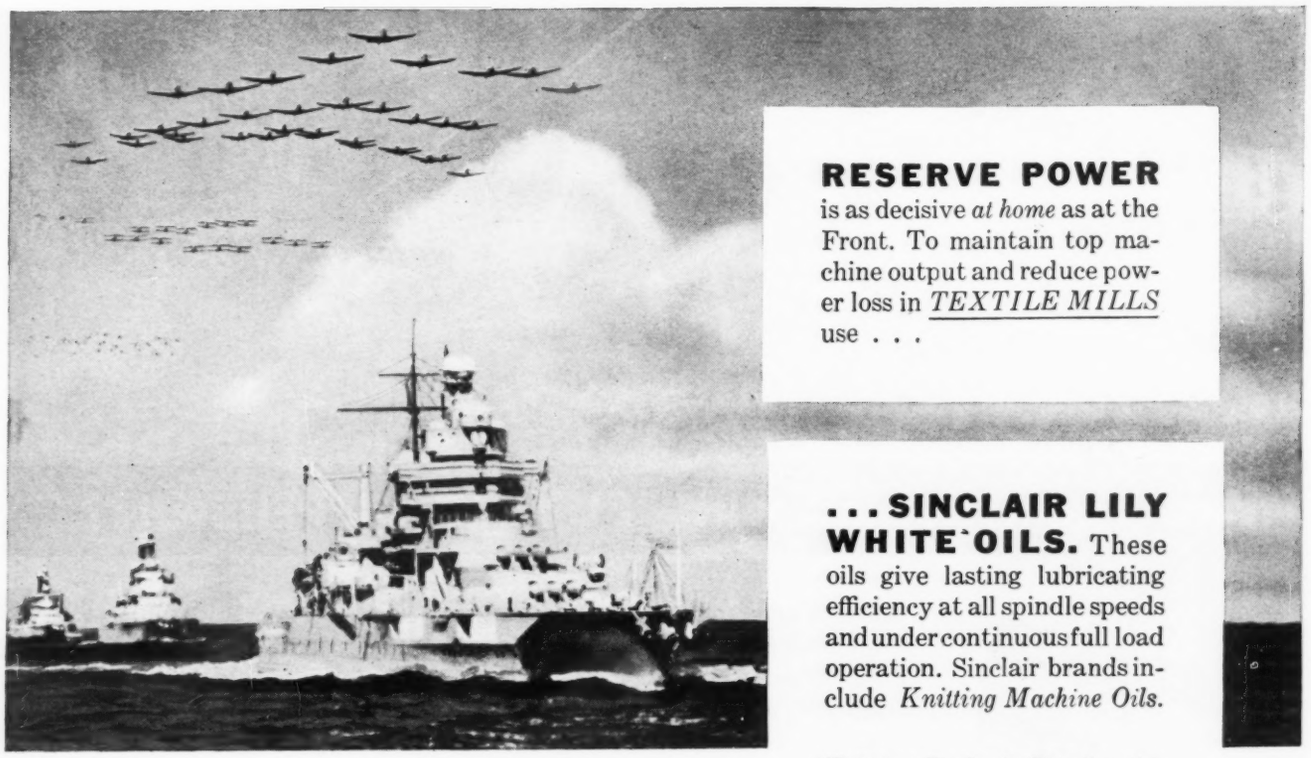
MANUFACTURERS OF SPINNING TAPE, MULE ROPE and BANDING

Also Sales Agents for LAMBETH PRODUCTS CORP., Antrim, N. H., *Makers of LUG STRAPS*

The Lambeth Line

1 SUPPLY SOURCE FOR 3 DEPARTMENTS

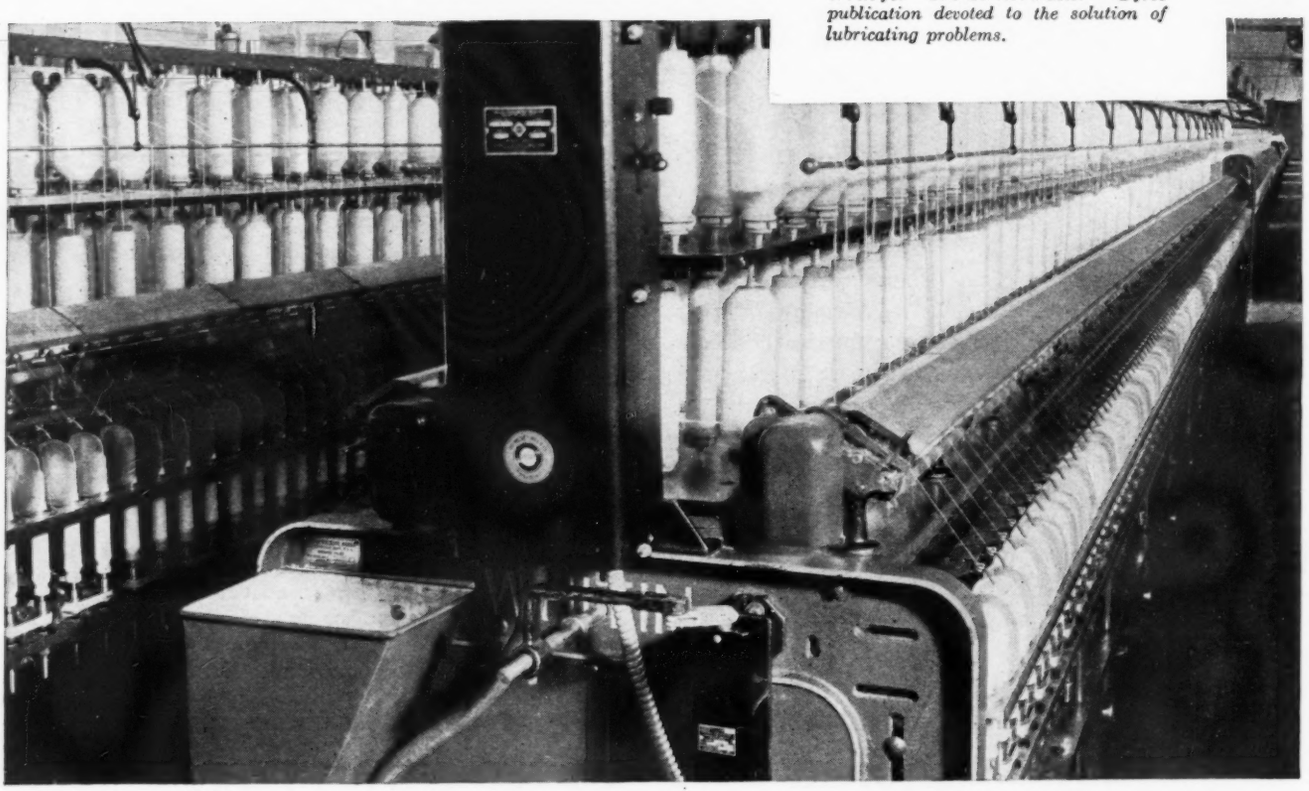
PREPARATION · SPINNING · WEAVING



RESERVE POWER is as decisive *at home* as at the Front. To maintain top machine output and reduce power loss in *TEXTILE MILLS* use . . .

. . . SINCLAIR LILY WHITE OILS. These oils give lasting lubricating efficiency at all spindle speeds and under continuous full load operation. Sinclair brands include *Knitting Machine Oils.*

Write for "The Service Factor"—a free publication devoted to the solution of lubricating problems.



SINCLAIR TEXTILE LUBRICANTS

FOR FULL INFORMATION OR LUBRICATION COUNSEL WRITE NEAREST SINCLAIR OFFICE

SINCLAIR REFINING COMPANY (Inc.)

2540 West Cermak Road, Chicago • 10 West 51st Street, New York City • Rialto Bldg., Kansas City • 573 West Peachtree Street, Atlanta • Fair Building, Ft. Worth

. . . . to achieve the ideal in continuity of production

Saco-Lowell-ize*

In the coming post-war era, with the return of a renewed competitive market, production costs will again be of vital importance. Routines which necessitate needless handling and transportation of material—equipment which is wasteful of stock, costly to operate and maintain, must be replaced with more effective and efficient machinery and methods. ¶Today many progressive mills are planning ahead—preparing blueprints, assembling data and other factual information for a program to Saco-Lowell-ize* immediately with the return to normal conditions. In this work Saco-Lowell engineers are available for consultation—ready to cooperate with your own mill staff in preparing the necessary data now for such a post-war program.

* **1.** *To utilize floor space so as to achieve the ideal in continuity of production.* **2.** *To coordinate all successive steps in processing.* **3.** *To reduce waste, spoilage and useless transportation of stock.* **4.** *To attain the greatest economy in maintenance and operating costs.*

SACO-LOWELL SHOPS

60 BATTERYMARCH ST., BOSTON, MASS.

Charlotte, N. C. *Greenville, S. C.* *Atlanta, Ga.*

P is for PRIORITIES...

the "quality or status of taking precedence," is Mr. Webster's way of saying "*first things first.*" However,

P also stands for PROGRESS...

defined here at Cyanamid in terms of chemical advancement and contributions to users of chemicals in industry. Priorities, therefore, and all the necessary limitations these must continue to imply become a patriotic challenge to our resource, experience and ingenuity to help relieve critical shortages of essential chemicals.

As a result, new Cyanamid developments have been coordinated with rapidly expanding capacities for greater production for the war effort. Other timely developments are serving to keep the wheels of many civilian industries turning. Among the latter are new formulations that may not only meet your immediate production needs, but which are likely to have far-reaching advantages beyond the present emergency. Write to Cyanamid for details.

AMERICAN CYANAMID & CHEMICAL CORPORATION

A Unit of American Cyanamid Company · 30 ROCKEFELLER PLAZA, NEW YORK, N. Y.

MANUFACTURERS OF

Sulphonated Oils · Penetrants · Finishes · Softeners · Sizing Compounds · Deceresol* Wetting Agents · and other specialties for the Textile Industry

**Reg. U. S. Pat. Off.*

THIS IS NO. 37 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

LUBRICATION OF ROTO-CONER*

The lubricating system of the Roto-Coner* has been designed to provide maximum protection with a minimum amount of attention. Practically all moving parts are completely enclosed and automatically lubricated by the splash system.

A visible oil gauge at the head end of the winder shows at all times the oil level in the reservoirs. Small quantities can be added from time to time so that the gauge will be always half-full. A high-grade petroleum oil having a Saybolt viscosity of 300 seconds at 100° F. is recommended.

Regular Oiling Schedule

Once every day the drive head ball bearings should be lubricated (with the winder stopped), using the same type of oil as in the frames.

The following points should be oiled once a week if the machine is operating 40 hours, twice a week if running 80 hours: traverse shaft ball bearings, conveyor pulleys, conveyor and cam chains. The switch roller and plunger also need weekly oiling. At these and other points, an oil having a Saybolt viscosity of 120 to 150 seconds at 100° F. is recommended.

Mills producing 5/8" paper tubes at speeds of 500 to 600 y.p.m., should be sure that the tube holders are given a drop of oil every doff when running counts finer than 30s, every other doff when on counts coarser than 30s.

Franklin holders require a few drops of oil once a month.

Paper cone holders should be greased once a month, using #505 grease. Where the Builder is used, it should be oiled once a week. Wood cone bushings are to be oiled every 80 hours.

It is important to wipe up any excessive oil which might drop on the bed or conveyor belt. Frame screws SC-1700 should also be checked to prevent oil leaking onto the conveyor belts.

Yearly Cleaning of Oil Tubes and Reservoirs

Once a year the oil can be drained from the machine, and the oil tube, oil ring reservoirs and connections can be cleaned. This will insure against any section not receiving ample lubrication due to the oil tube becoming clogged.

With the plug at the remote end of the winder removed, the oil is allowed to drain out. Frame caps are also removed—and since each fifth frame cap is assembled to the frame by means of two long bolts which also go through the Shelf Bracket Feet, the Shelf will have to be supported by a block located under the Shelf and on Cam Shaft Housing (Fig. 1).

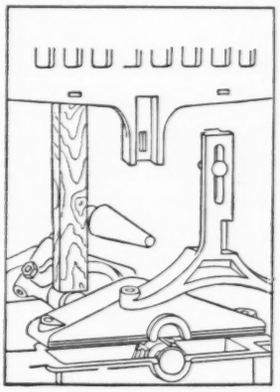


Fig. 1

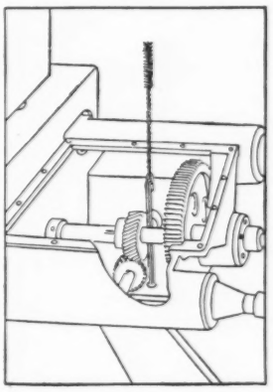


Fig. 2

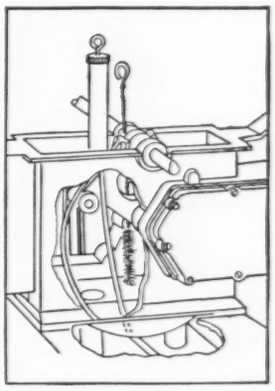


Fig. 3

With the oil drained from the machine, an "electrician's snake" without brush should be inserted through the tube from remote to head end; then with the brush attached (Fuller Brush, Catalog #1128), it should be snaked in through the opening at the head end created by removal of the pilot motor and base (Fig. 2), and drawn slowly through the tube to the remote end.

While drawing the brush through the tube, the frame connections should be probed with Fuller Brush, Catalog #1127 (Fig. 3). This brush should be allowed to remain in the oil tube to frame connection to prevent oil and lint being forced back into the frame. (This is a two-man job; one to draw the brush through the oil tube, the other to probe the connections.)

All excess oil in the oil reservoirs can be removed with a suction pump. Then, with the plug at the remote end back in place, the machine should be filled with 15 quarts of Solnus Oil (or equivalent) for each 100 spindles. Oil that has been drained from the reservoirs can, of course, be used again, after it has been strained through a felt cone.

In replacing frame caps, the gaskets (44-6-2) should be inspected and replaced if damaged.

Quarterly Check on Supply

While the above measures need be taken only once a year, it is wise to check the frames at least once every three months. The oil gauge at the head end of the winder can be depended upon to indicate the amount of oil in the reservoirs, but this periodic inspection of all spindles will reveal any case of the oil tube becoming clogged.

Should a spindle be lacking oil, it will drop abruptly onto the traverse when the starting handle is pressed down. When such a condition prevails, oil should be added. The machine should also be checked for level and alignment (see "Getting the Most from Winding" No. 20).

After allowing three or four hours for the oil to reach its level, another check should be made. If any spindles are still not fully supplied, it is logical to assume that the flow of oil between sections has become obstructed, in which case, the oil tubes and connections must be cleaned as related above.

See our Catalog in TEXTILE YEARBOOK
43-GMW-37

"THERE'S A UNIVERSAL WINDER FOR EVERY TEXTILE NEED"

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA

*Reg. U.S. Pat. Off.

How Gulf Lubrication Service Engineers are giving effective help to improve production

Increased production . . . "Since we installed the lubrication practice recommended by a Gulf Lubrication Service Engineer, production has increased in every mill department," says a woolen mill Superintendent. "We are now able to operate equipment at most efficient speeds, and to avoid shutdowns except for periodic inspection."

Increased production . . . "We have had complete freedom from oil stains and have secured better performance from our equipment since we adopted Gulf Engineering recommendations," says a mill Superintendent. "As a result, we have increased production and lowered our operating costs."

Increased production . . . "The quality lubricants recommended by a Gulf Lubrication Service Engineer are doing a real job for us," says an Overseer of Weaving. "Month after month our cost and production records tell a story of the benefits of better loom lubrication—improved quantity and quality of production, and lower maintenance expense.

Seconds reduced 50% . . . "The quality greases recommended by a Gulf Lubrication Service Engineer are an important factor in the all-around better performance of our Dobby looms, which has resulted in a 50% reduction in seconds," says a Superintendent of Weaving.

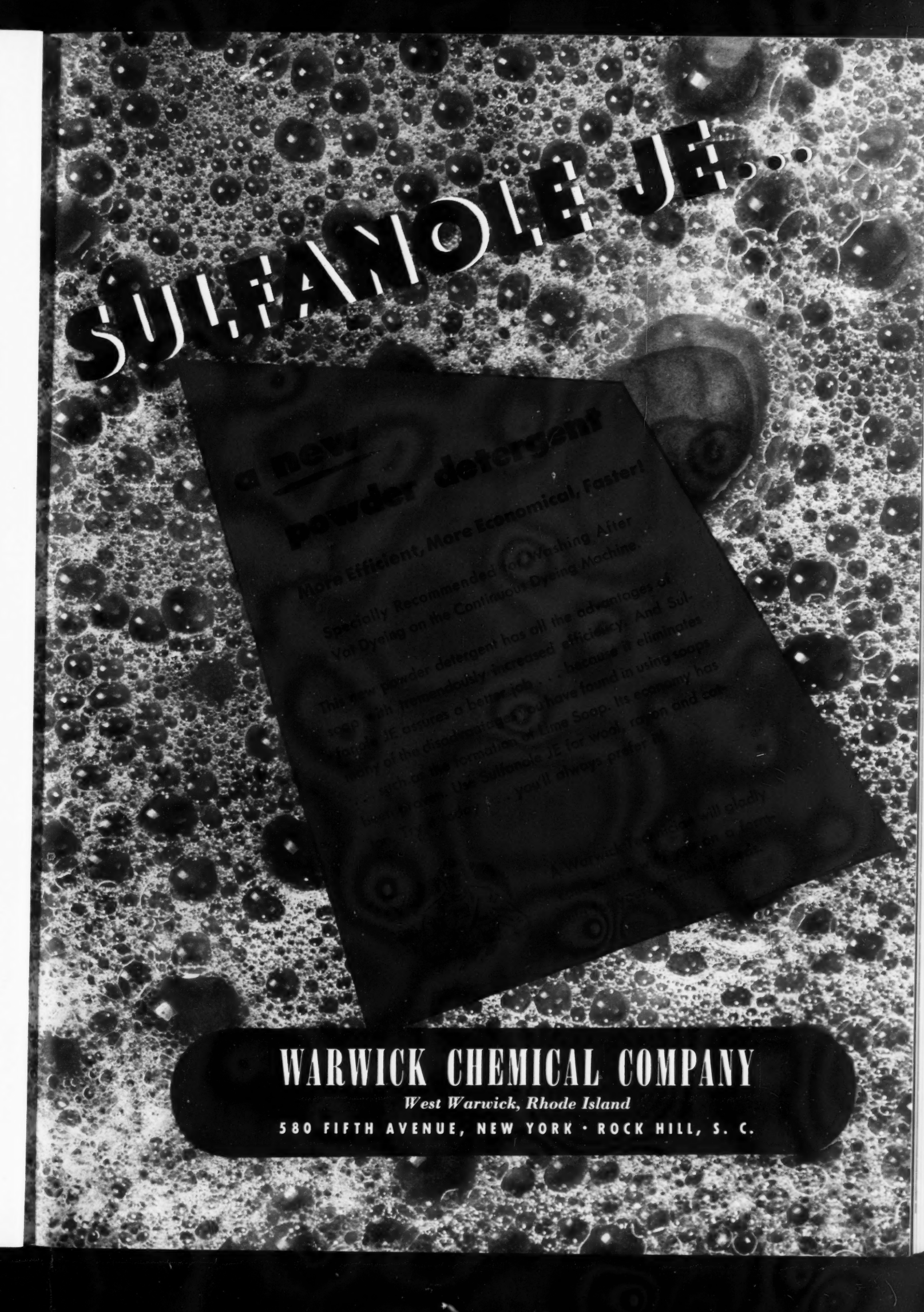
Warper stops reduced . . . "Our warper stop record shows a big improvement since we adopted the recommendations of a Gulf Lubrication Service Engineer," says an Overseer of Spinning.

Lower repair costs . . . "I have tangible evidence of better lubrication since we adopted the recommendations of a Gulf Lubrication Service Engineer," says an Overseer of Weaving. "First, our loom parts bill is way down; and second, we haven't had a loom fire in months, for the Gulf grease on the cams stays right where it belongs."

GULF OIL CORPORATION · GULF REFINING COMPANY · PITTSBURGH, PA.

Call in a Gulf Lubrication Service Engineer to help improve your production

GULF INDUSTRIAL LUBRICATION


SULFANOLE JE...
a new
powder detergent
More Efficient, More Economical, Faster!
Specially Recommended for Washing After
Vat Dyeing on the Continuous Dyeing Machine
This new powder detergent has all the advantages of
soap with tremendously increased efficiency. And Sul-
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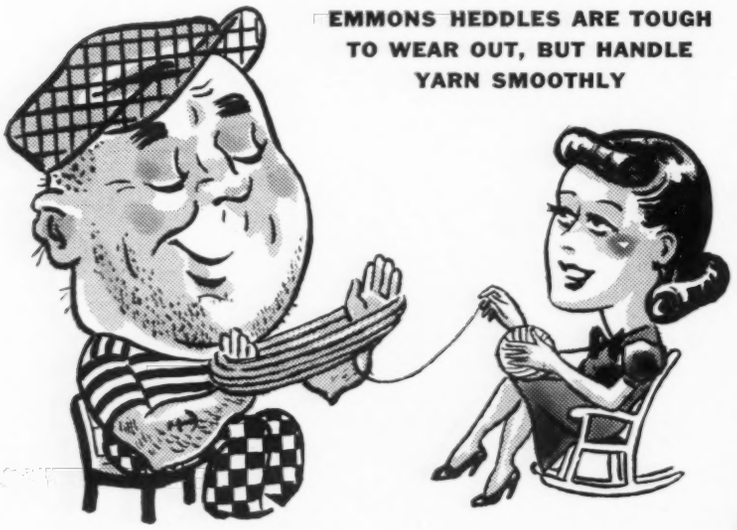
such as the formation of lime soap. Its economy has
been proved. Use Sulfanole JE for wool, rayon and cot-
ton . . . you'll always prefer it.
WARWICK CHEMICAL COMPANY
West Warwick, Rhode Island
580 FIFTH AVENUE, NEW YORK · ROCK HILL, S. C.

Treats Yarn Like a Gentleman

EMMONS HEDDLES ARE TOUGH TO WEAR OUT, BUT HANDLE YARN SMOOTHLY



The *toughness* of an Emmons heddle cuts replacement costs. High tensile strength and durable rust-resistant coat keep it on the job longer.

The *smoothness* of an Emmons heddle eye guards production and cloth quality. Extra polishing of streamlined surfaces prevents yarn chafing and warp breaks.

To keep heddles "tough but never rough" year after year, Emmons' manufacturing processes are carefully controlled and sample heddles are periodically examined by a famous testing laboratory.

Write "Emmons" in front of your next order for steel heddles to get the *gentle* strength that saves replacement costs and keeps yarn strong and full.

BE CERTAIN . . . BUY CERTIFIED

YOU CAN *SEE* THE EXTRA SERVICE

An Emmons heddle frame has an extra number of rolled rivets that keep it extra-strong where extra strength is needed; the hand-picked, knotless lumber, with two coats of shellac; and the rust-proof metal that won't catch or discolor yarn. Strong construction reduces vibration, and there's no buckling and binding at the highest speeds.

GIVES YARN PLENTY OF ELBOW ROOM

For fewer loom stops, rejects and seconds, under the stress of continuous operation, you want a reed providing free warp movement, smooth yarn passage, without sacrificing rigidity. Emmons reeds are air-spaced up to 70% if required. So accurate is the spacing and so smooth the dents, that reed marks are avoided, while yarn inequalities cause no trouble.

"Inspected well before shipping" — by an Emmons inspector — is what this seal means on every shipment to you.

Be Certain . . . Buy Certified

EMMONS LOOM HARNESS COMPANY

Lawrence, Mass. **Charlotte, N. C.**

EMMONS LOOM HARNESS COMPANY

Lawrence, Massachusetts . . . . Charlotte, North Carolina

Lawrence, Mass. and Charlotte, N. C. Products stocked in Charlotte and Lawrence. Reeds manufactured at both plants. Branch offices: Clifton Watson, Manager of Southern Sales, George Field, Plant Manager, Box 2036, Charlotte (Tel. Charlotte 3-7503) . . . Arthur Harris, Box 1982, Atlanta (Tel. Main 2643) . . . Alvin Braley, Box 236, Itasca, Tex. (Tel. 170) . . . W. S. Taylor, 171 Madison Ave., New York (Tel. Lexington 2-6060) . . . Albert R. Breen, 80 East Jackson Blvd., Chicago (Tel. Harrison 7140).

Argentina, Buenos Aires, Roberto Zander, 345 Juan Jaures; *Brazil,* Rio de Janeiro, A. Polak, Caixa Postal 362; *Chile,* Valparaiso, W. L. Robinson, Casilla 1570; *Cuba,* Havana, J. M. Perez-Pena, Box 1611; *Mexico,* Mexico, D. F., Leo Lenk, Apartado 533; *Colombia,* Medellin, C. E. Halaby & Co., P. O. Box 139.

See latest TEXTILE WORLD YEARBOOK for details on all Emmons Products

EMMONS

For Waterproofing of all Military Fabrics

LUPOSEC P.Q.D.

A water repellent finish meeting quartermaster specifications for waterproofing military fabrics.

LUPOSEC C.U.

A waterproofing compound incorporating copper as a mildewproofing agent.

LUPOSEC I.N.

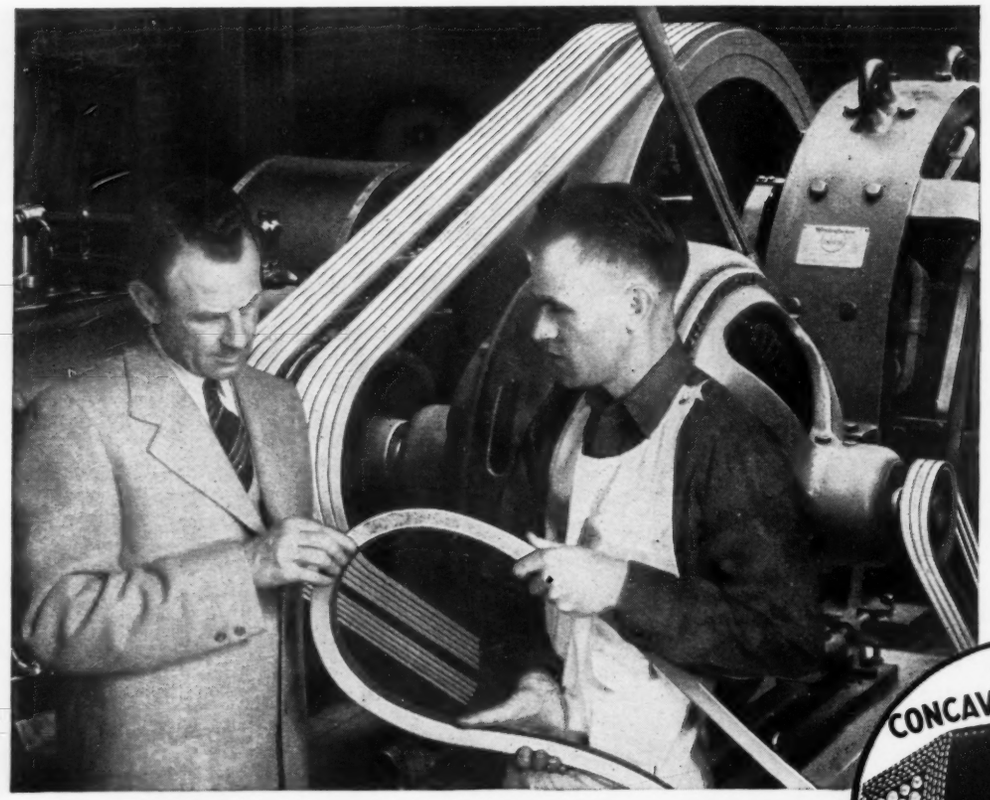
A solvent soluble waterproofing product prepared especially to meet specifications for processing army duck.

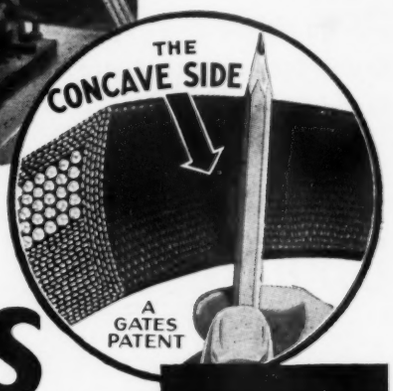
WOLF BRAND PRODUCTS

JACQUES WOLF & CO.

Chemicals **PASSAIC, N. J.**

WAREHOUSES: Providence, R. I., Philadelphia, Pa., Utica, N. Y., Chicago, Ill., Greenville, S. C., Chattanooga, Tenn., Knoxville, Tenn., Charlotte, N. C., Milwaukee, Wisc., Columbus, Ga.





This Simple Idea . . .
is SAVING BELTS
for *Industry*. . . and Rubber for the *Nation*

To see for yourself the belt-saving importance of the CONCAVE SIDE, just pick up *any* V-belt and bend it as it bends when it goes around a pulley.

As the belt bends, grip its sidewalls firmly with your fingers as in the photograph above. You will feel the sides of the belt *change shape*. If the sides were straight before bending, they will *bulge outward* as the belt bends. (See Figure 1 on the right).

Now look at Figure 2. Here you see how bending changes the shape of a belt that is built with the patented Concave Side. The side becomes perfectly *straight*. This belt, when bent, precisely fits its sheave groove. Here are the savings:—(1) There is no side-bulge. This means *uniform* wear—*longer* life—a saving in belts for you, a saving in rubber for the Nation. (2) The full side-width of the belt uniformly *grips* the sheave groove wall—carries heavier loads without slippage—another saving of belts and a saving in power, too!

Only belts built by Gates are built with the Concave Side, a Gates patent.

What Happens When a V-Belt Bends

FIG. 1

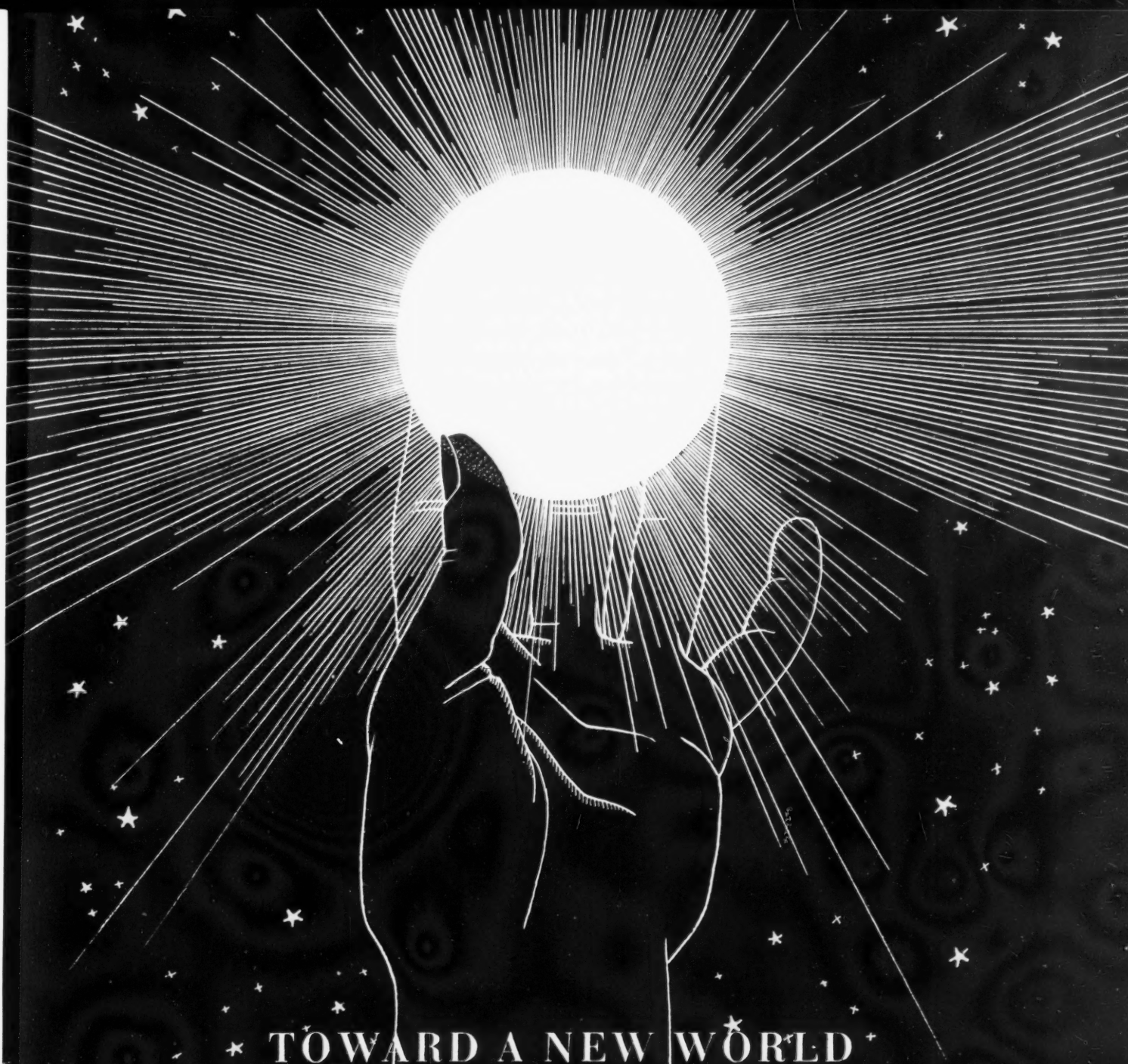
FIG. 2

THE GATES RUBBER COMPANY

Engineering Offices and Stocks in All Large Industrial Centers

GATES VULCO ROPE DRIVES

Chicago, Ill. 549 West Washington
Dallas, Tex. 2213 Griffin Street
New York City 215-219 Fourth Avenue
Birmingham, Ala. 405 Liberty National Life Bldg.
Los Angeles, Cal. 2240 East Washington Blvd.
Charlotte, N. Carolina 507 Builders' Bldg.
Greenville, S. Carolina 201 Woodside Bldg. Annex
Atlanta, Georgia 738 C. & S. Natl. Bk. Bldg.



TOWARD A NEW WORLD

Out of the frenzied ferment into which the whole world has been so violently tossed there will evolve a new sphere of action ☆ Out of this epic struggle America will emerge mightier than ever with its resources intact and potentialities expanded ☆ Machines of destruction will be converted into engines of creation. American industry will continue to use all hands and pour forth an abundance of products that will be needed by exhausted nations ☆ Out of our efforts to meet today's emergencies will come unique discoveries that will contribute vastly to the life of tomorrow. Every hour we are moving faster toward that *New World.*

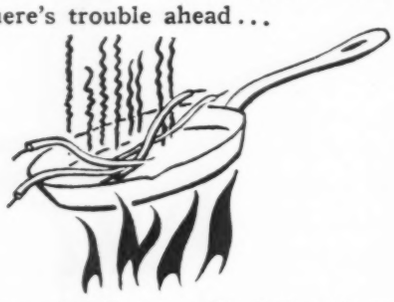
GENERAL DYESTUFF CORPORATION • NEW YORK

Plan for a Long War—Work for a Short One!

No one can say how long this war will last. But maintenance can say how long America's *motors* will last... and how efficiently they will work to help *shorten* the war!

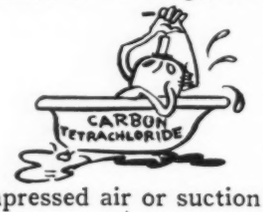
MAINTENANCE "as usual" went out with Pearl Harbor. Today, every U. S. maintenance man knows he's pitted against a Jap or Nazi maintenance man. He's got a man-sized job...

For example, if the current in a motor exceeds its nameplate current rating, heating may increase as much as the *square* of the current increase! And when a motor runs a fever, there's trouble ahead...



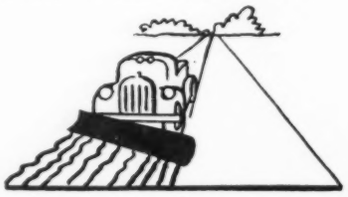
Excessive heat can "fry" the life out of insulation, melt soldered connections, burn out bearings. That's why a close eye must be kept on every motor's overload protection.

Friction is another dangerous source of heat — so the right lubricant in the right amount must be kept *in* bearings and dust must be kept *out!* For cool-running motors, dust must be kept out of *windings*, too...



If compressed air or suction doesn't get the dust out, it's necessary to give the dirty motor a "bath". *Promptly*, too — because the rim travel of a rotor in many motors today is round the world *every eight days*...

Some job to keep motors rolling at that rate — for the duration!



Just as "rutting" is fought in road maintenance, "grooving" must be fought in *motor* maintenance. Some wear is inevitable on slip rings and commutators, of course. But *smooth and even* wear is *slow* wear!

"Keep oil where it belongs" is a basic rule in maintenance. Once outside bearings, it attacks any insulation it reaches. *Inside* bearings, oil must be protected against misalignment pressures...

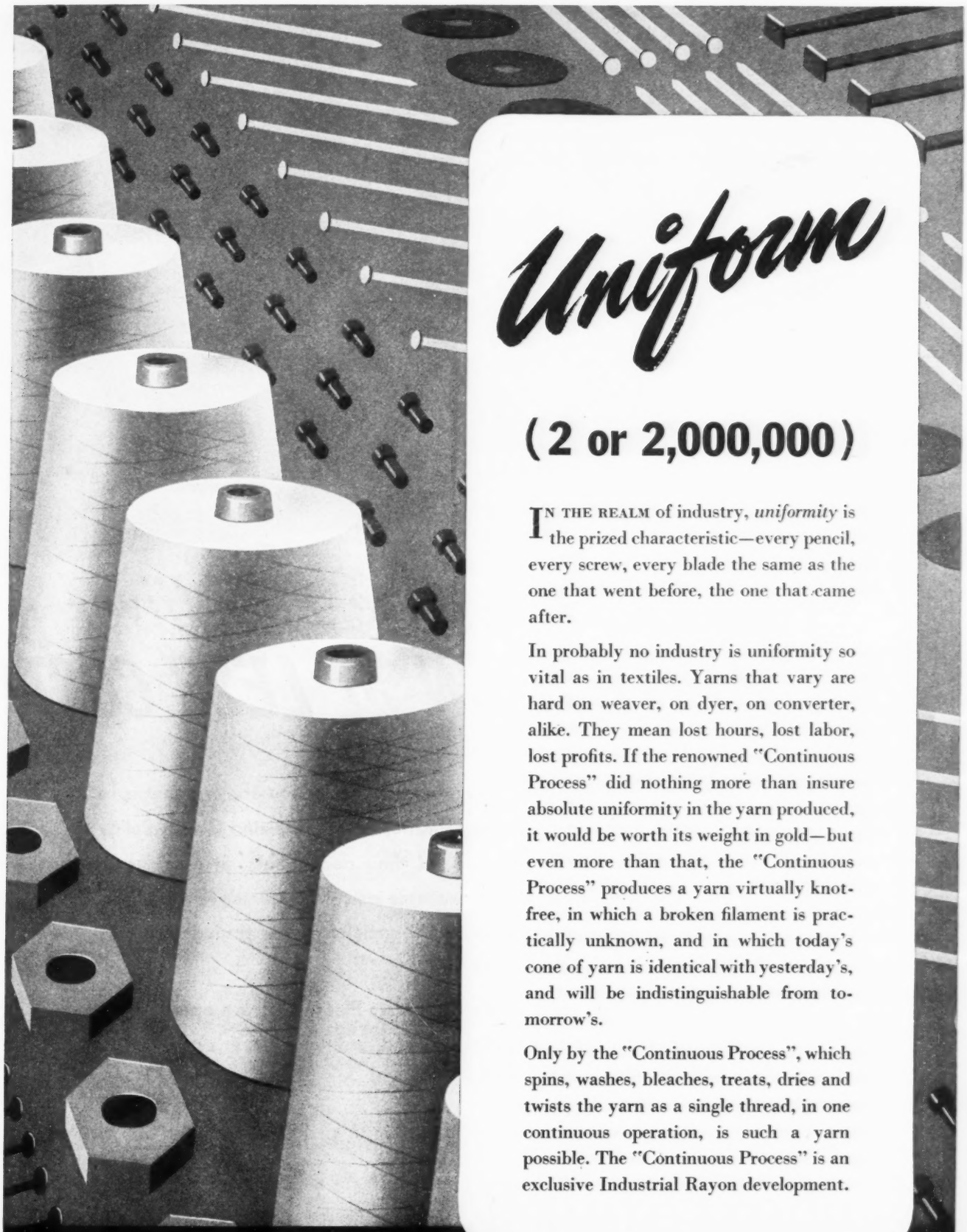
The oil film guarding a bearing often is no thicker than the wall of a soap bubble... can fail just as suddenly — *and completely!*

For the full story of what *today's* maintenance should be, send for your free copy of "A Guide to Wartime Care of Electric Motors." It's fully illustrated (with the sketches above and many more), practical, complete. ALLIS-CHALMERS MFG. CO., MILWAUKEE, WISCONSIN.

A 1553

ALLIS-CHALMERS

WE WORK FOR VICTORY · WE PLAN FOR PEACE



Uniform

(2 or 2,000,000)

IN THE REALM of industry, *uniformity* is the prized characteristic—every pencil, every screw, every blade the same as the one that went before, the one that came after.

In probably no industry is uniformity so vital as in textiles. Yarns that vary are hard on weaver, on dyer, on converter, alike. They mean lost hours, lost labor, lost profits. If the renowned "Continuous Process" did nothing more than insure absolute uniformity in the yarn produced, it would be worth its weight in gold—but even more than that, the "Continuous Process" produces a yarn virtually knot-free, in which a broken filament is practically unknown, and in which today's cone of yarn is identical with yesterday's, and will be indistinguishable from tomorrow's.

Only by the "Continuous Process", which spins, washes, bleaches, treats, dries and twists the yarn as a single thread, in one continuous operation, is such a yarn possible. The "Continuous Process" is an exclusive Industrial Rayon development.

"CONTINUOUS PROCESS" Spun-lo Rayon
Reg. U. S. Pat. Off.

INDUSTRIAL RAYON CORPORATION • Cleveland, Ohio—New York Office, 500 Fifth Avenue

...the Protective Plan Gives MORE PROTECTION at LESS COST!

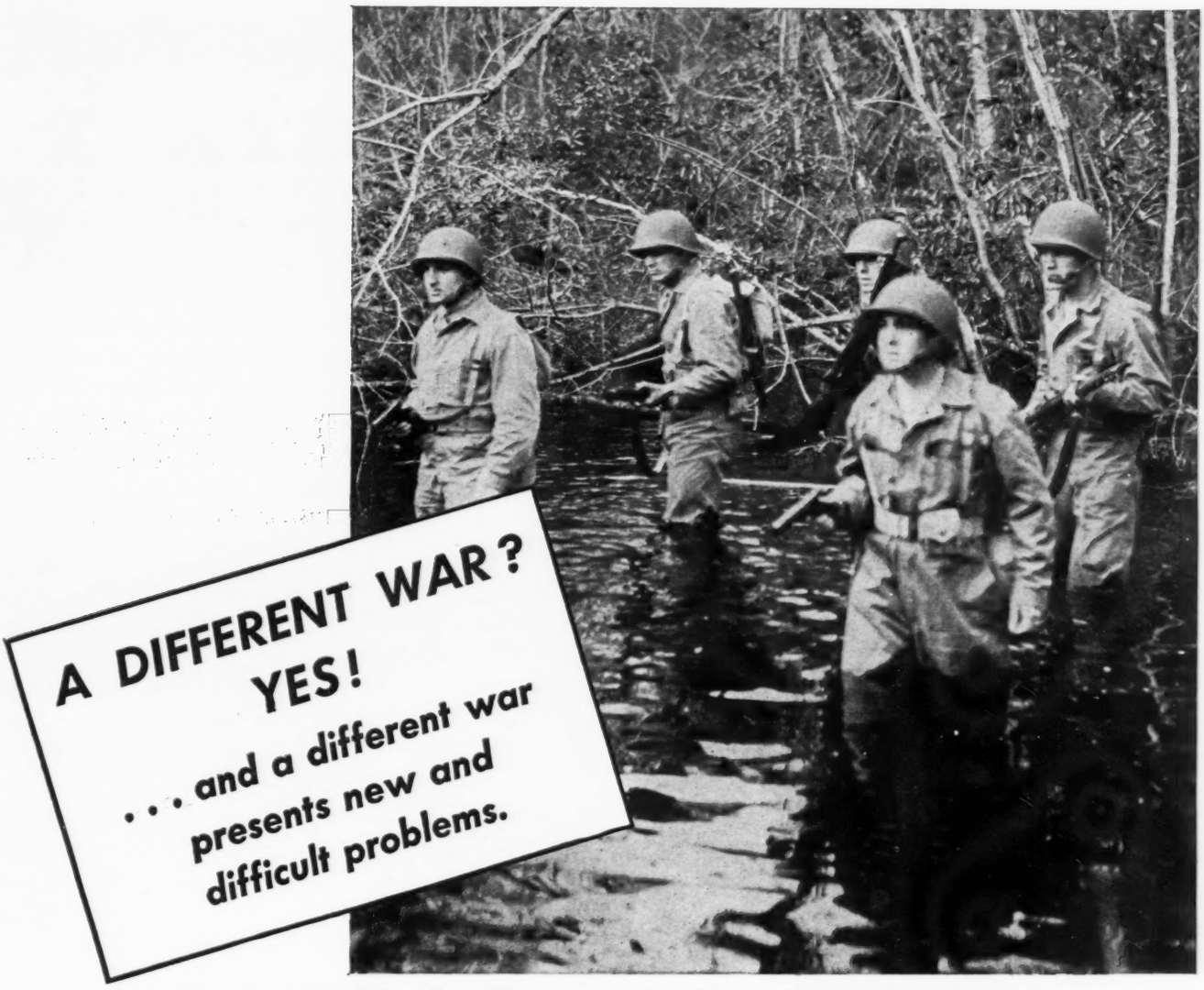
Only you, the employer, can arrange for all of the above benefits to be combined into one policy. In most cases, the one Group Policy covers both your employees and their dependents, at a saving in cost and with other values available only through the Group Plan. These savings may be converted to articles of war through the purchase of Defense Bonds and Stamps.

Let us show you some of the Protective Plans which are operating so successfully in leading textile mills and, in the Employer's own words, the value he places on such a Plan.

PROTECTIVE LIFE
INSURANCE COMPANY

WILLIAM J RUSHTON
President

BIRMINGHAM
ALABAMA



Uncle Sam's fighting men in the jungle, in the Arctic, on the desert - - all over the world - - are demanding fabrics finished to meet the extreme conditions of this *new* kind of war. ● Arkansas' vast peacetime experience is now solving wartime problems . . producing for textile processing and finishing plants products that meet exacting government specifications.

FRONT LINE PRODUCTS

FUNGICIDE G For mildewproofing all types of cotton cloth used in sleeping bags, webbing, tentage, mosquito netting, etc.

ARKO FIRE RETARDANT For flame-proofing uniform cloth, tentage, felts, etc.

CULOFIX L* For preventing color-bleed in water of direct dyed cotton.

AQUAROL* Produces a water-repellent finish on uniform cloth, overcoatings, and other military fabrics . . used in a single bath treatment with Fungicide G to impart water-repellency and mildew resistance . . used in a single bath treatment with Arko Fire Retardant to produce water-repellency and fire-resistance.

*REG. U.S. PAT. OFF.

ARKANSAS CO. INC. NEWARK • NEW JERSEY

FAST, EFFICIENT ACTION will win the war

There's just one way to win this war—by fighting *fast* and fighting *efficiently*. You can depend on American fighting speed *and* efficiency, providing our industries keep *producing* fast enough to supply our men with necessary equipment.

UNIVERSAL RING

BOWEN ROUND POINT TRAVELERS
BOWEN SQUARE POINT TRAVELERS
BOWEN IMPROVED VERTICAL BRONZE
BOWEN PATENTED BEVEL EDGE
BOWEN PATENTED NO-BOW VERTICAL
BOWEN PATENTED VERTICAL OFFSET
BOWEN FLAT OVAL AND ROUND
MISC. TRAVELERS

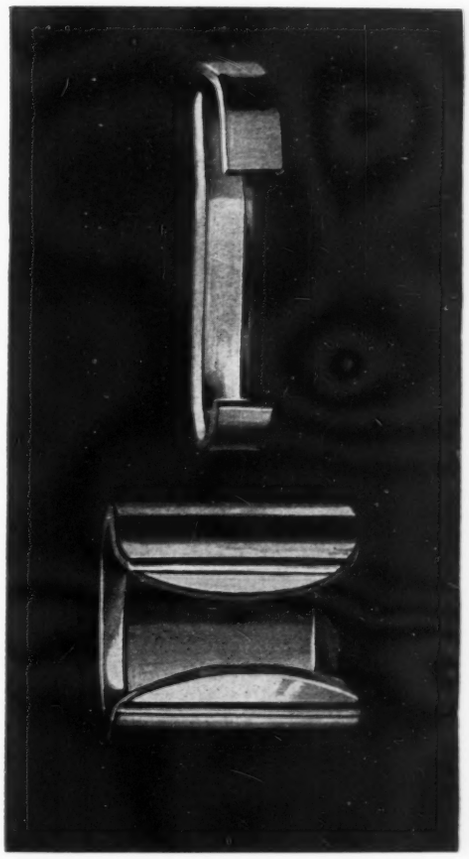
High-Speed
TEXTILE PRODUCTION
CAN TURN THE TIDE

Textiles aren't bullets, but they certainly help keep a modern army in action! The cotton industry *alone* is devoting over 65 per cent of its productive equipment to military orders, including bag fabrics needed to wrap agricultural products. Textile machinery must supply military, industrial, and civilian needs as well. They must operate efficiently, yet at high speed. And Ring Travelers—the focal points of good yarn—help guarantee both efficiency and speed.

Long research and experience stand behind the manufacture of Universal Standard Ring Travelers, with their perfect design, resistance to heat, uniform size and weight. Like many another mill man, you'll find U. S. Travelers help maintain even yarn tension, help produce better yarn. They cost less, too, because they last longer, wear better, assure smoother production. Specify U. S. Travelers for *your* machines, and assure maximum yarn volume in these days when fast output counts every minute.

U. S. Ring Travelers have the Bowen Patented Bevel Edge feature, which helps produce yarn of uniform twist, on perfectly designed packages. Split ends in throwing are prevented. There are no angular edges to flatten the end—no fly waste in spinning and twisting fibers. Made and stocked in all sizes and weights, for all kinds and counts of yarn.

U. S. Travelers reach you in perfect condition—with no tampering or loss in count—because they're packed in sealed metal containers.



U. S. RING TRAVELER CO.

PROVIDENCE, R. I. GREENVILLE, S. C.

AMOS M. BOWEN, Pres. and Treas.

Southern Representatives

William P. Vaughan, P. O. Box 792, Greenville, S. C. Torrence L. Maynard, P. O. Box 456, Belmont, N. C.
William H. Rose, P. O. Box 792, Greenville, S. C. Oliver B. Land, P. O. Box 1187, Athens, Georgia

U.S. RING TRAVELER CO.

"A Traveler for Every Fibre"

STANDARD TRAVELERS

The Last Hour of the War

NO ONE KNOWS the day or the hour when this war will end. But the end will come sooner as America steps up the speed of war production today . . . and every day. If this is not true, then all our talk of production means nothing.

Yet the life or death of thousands can depend on shortening the war, even by a single hour.

Think what can happen in one hour! A machine gun can fire over 10,000 bullets. An anti-aircraft gun can hurl more than 1,000 shells into the blue. In a single hour a battleship can throw over 500 tons of armor-piercing steel more than 14 miles.

In that same hour a flight of 1,000 bombers can drop 2,000 tons of bombs . . . enough to cause heavy damage in a city as large as St. Louis, or Los Angeles, or Cleveland, or Philadelphia, or Chicago.

No one can say what happened in World War I, in that hour between ten and eleven A.M. on November 11, 1918. But we do know that throughout that morning there were many casualties on both sides. We know that the New York Times published casualty lists showing that 1,021 American soldiers were killed in action or seriously wounded during that one morning's fighting. And some of those casualties must have occured within *minutes* of the end!

That was World War I . . . compared to which the present war is as a tropical hurricane to a March breeze.

Any war worker who can do *anything* to save man hours on the production of *any* vital war material . . . can feel that he is helping end the war perhaps seconds sooner. This applies to all types of mills throughout the textile industry.

Whatever helps, even a little, to speed the production of war materials, might help bring that last hour of the war nearer. One thing that *is helping* is good lighting. Over and over again we have had reports from war plants of production increases after lighting faults have been corrected. Increases ranging all the way from three per cent to twenty-five per cent or more, *especially on the night shifts.*

Even a 3 per cent increase in production could amount to a staggering total if applied to the thousands of mills that are not properly lighted for efficient night production.

* * *

So, if you are working on war orders, won't you find out whether lighting can work harder in your plant . . . especially at night? General Electric Company, Nela Park, Cleveland, Ohio.

G-E MAZDA LAMPS

GENERAL ELECTRIC

If you call your nearest G-E lamp office, they will place a trained Wartime Lighting Counsellor at your service. Perhaps his suggestions may help to increase production. Your local electric service company or your G-E lamp supplier can also help you.

ENLIST NOW

in the battle against power-waste!

● *Power-waste* becomes *productive-power* when the Gilmer National Power-Recovery Plan goes to work in your plant. It gives you useful Power-Recovery Estimators ... practical power-saving charts for each of these services: Electricity, Steam, Water, Gas, Mechanical Transmission, Compressed Air, Refrigeration, Boilers, and Prime Movers. Put them to work—today!

The Gilmer Plan was designed especially to build up Industry's power resources through systematic reduction of power wastes. Into it has been knitted the expert knowledge of leading power engineers, the Plan is completely practical and workable.

Do you know for sure that your boiler room is working at top efficiency? Isn't it possible that you could cut electricity consumption, and still keep things humming at full speed? *Don't take chances with the Nation's precious power!* Line up with the Gilmer National Power-Recovery Plan ... *NOW!* All in one convenient booklet, it's yours for the asking, without cost or obligation.

L. H. GILMER CO., Tacony, Philadelphia, Pa.

The Oldest Firm of Rubber Fabric Belt Specialists

USE WHAT YOU LOSE

Gilmer BELTS

If your problem is belts...

The Gilmer Handy Belt Selector is designed to help you choose the correct Gilmer Belt for any purpose. Use it when selecting V-Belts, Flat Belting, Round Endless Belts, Belts for Textile Machinery, and many special purpose belts... for added efficiency and an aid to power-recovery. Write for this handy Gilmer Chart—it's free on request.

L. H. GILMER CO.
Tacony, Phila., Pa.

Gentlemen:

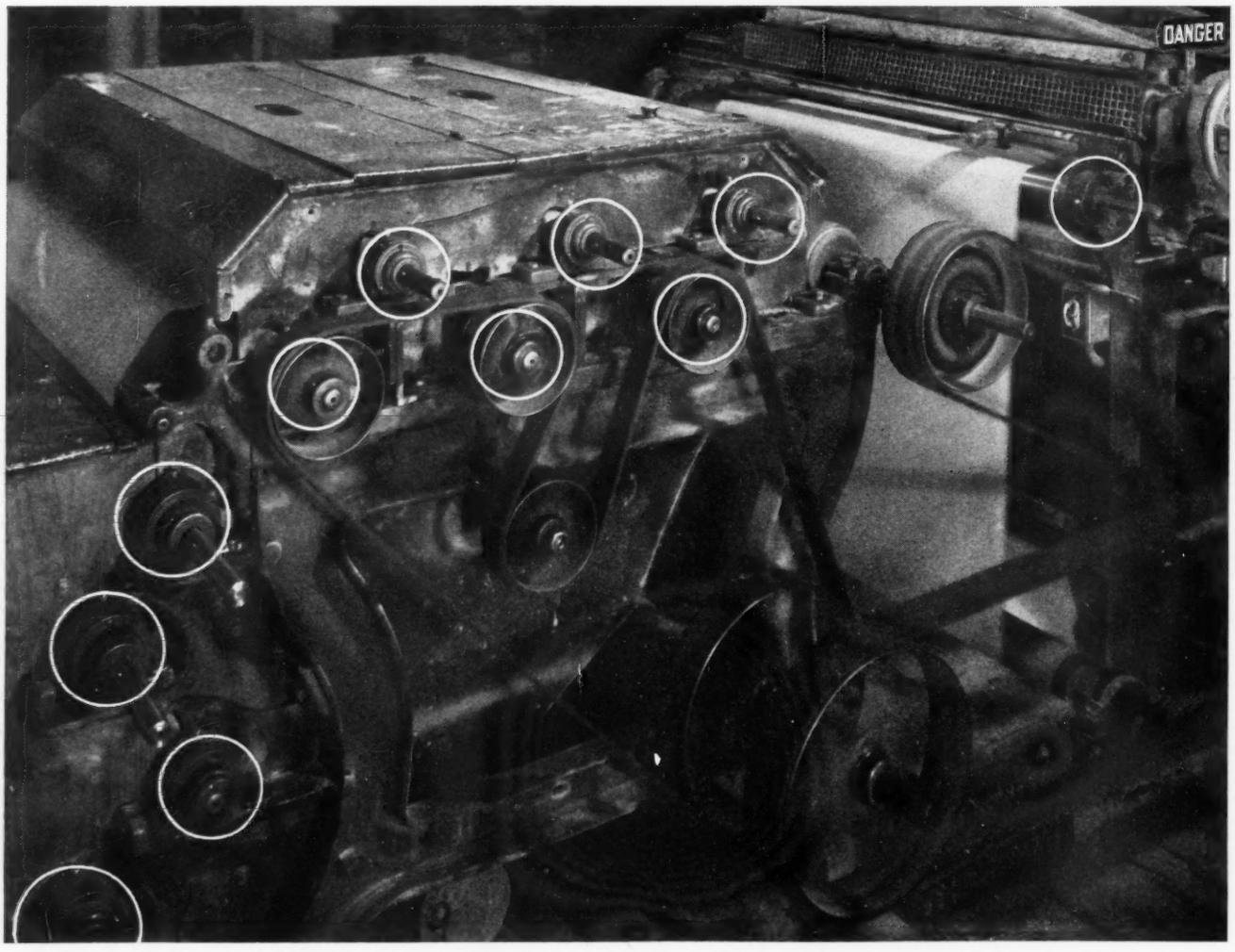
Please send me, without cost or obligation:

- ☐ The Gilmer National Power-Recovery Plan
- ☐ The Gilmer Handy Belt Selector

NAME & TITLE_____

COMPANY_____

ADDRESS_____



Twin Trouble-makers . . . Now Harmless

Self-Aligning, Clean-running Fafnirs Offset Expansion and Contraction of High-speed Shafts . . . eliminate Oil-spattered Cloth

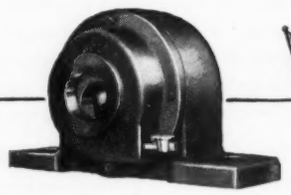
SPEED was one of the problems in this Cotton Mill working on war orders. They had to meet close production schedules . . . machines had to run "lickety-split" to keep up the pace. Due to high speeds and attendant heat conditions, oil or grease just wouldn't stay in plain bearings . . . and it damaged many yards of cloth.

EXPANSION and CONTRACTION of high-speed shafts was another headache. A shaft out of line, or a bearing out of line . . . caused trouble. Under such conditions, any but the right type of bearing would have a very short life. When one bearing failed, production had to stop . . . and wait!

A Fafnir Engineer suggested Fafnir SAOL Type, Self-aligning Pillow Blocks as the solution for both problems!

The Fafnirs went in . . . *on trial.* Now . . . after more than 12 months on the job, the Fafnirs have proved themselves. They stand up under considerably greater speeds and loads than had hitherto been practical. Oil damage to cloth has been entirely eliminated.

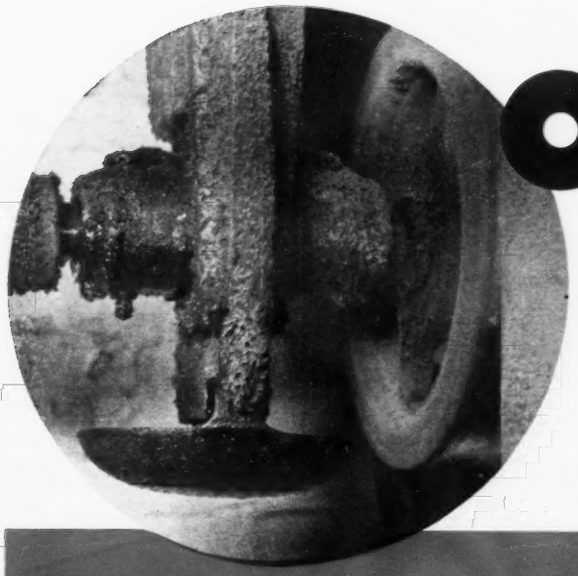
The Fafnir Ball Bearing Units that answered the needs of this mill are the result of Fafnir's engineering thoroughness. In the Textile Industry, as in other industries, Fafnir has made a careful study of the bearing problems of every type of machinery and equipment used. The resulting line of Fafnir Ball Bearings increases the efficiency of machines and equipment, cuts maintenance costs, and saves power consumption. The Fafnir Bearing Company, New Britain, Conn. Branch Offices: Atlanta . . . Birmingham . . . Boston . . . Charlotte . . . Dallas.



FAFNIR

BALL BEARINGS

THE BALANCED LINE - FOR ORDNANCE, AIRCRAFT AND INDUSTRIAL MACHINERY



OIL you can see is waste you can STOP!

LEAK-RESISTANT LUBES MEAN *Less oil... Less often*

"Oil is ammunition — use it wisely!"

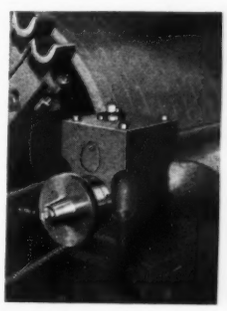
That applies to textile mills as well as to all industry. To use oil *wisely* means, first, a careful selection of the right *type* of oil.

Choose an oil which clings, which adheres, which possesses great resistance to leakage. Choose an oil of high film strength, of high oiliness value.

Choose STA-PUT Lubricants—for looms, comb boxes, shafting, motors, and many other places throughout your mill. A thorough trial will convince you that STA-PUTS merit their slogan "Less Oil, Less Often."

←Oil stains on yarn or fabrics are a definite waste—a costly annoyance. Use STA-PUT Lubricants and keep the oil where it belongs.

Oil you can *see* isn't helping you. Dripping from machines and shafting is a safety menace, and increases oiling labor expense.



←Leaky comb boxes are often trouble spots. STA-PUT polymerized oils are doing a fine job in comb boxes as well as in other hard-to-lubricate places in mills. Ask the Houghton Service Engineer, or write—

E. F. HOUGHTON & CO.

Charlotte — PHILADELPHIA — Chicago

HOUGHTON'S STA-PUT LUBRICANTS

Courtesy of T.W.A.

With the Minimum of Man-Power!

Floor-maintenance methods that otherwise may be effective in conserving man-power —by providing safer floors for workers— may be dissipating the gains through use of equipment requiring an excessively large cleaning crew. *Just one operator is required for the scrubbing, rinsing, and drying operations with a Combination Finnell . . . it's a complete cleaning unit all in one!*

Actually, a *Combination Finnell* and one operator can do the work of a whole crew using separate equipment for rinsing and drying. In addition to the saving of man-power which the *all-in-one* feature of a *Combination Finnell* makes possible, there's the equally important saving in man-hours due to the speed of the machine. The largest size can clean as much as 8,750 sq. ft. of floor an hour! There are several smaller sizes.

For FREE FLOOR SURVEY, consultation, or literature showing the full range of *Finnell Combination Scrubbers,* phone or write nearest *Finnell* branch or Finnell System, Inc., 1301 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.

Pioneers and Specialists in

FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES

BRANCHES IN ALL PRINCIPAL CITIES

more production-

for textile mills everywhere!

Lint can't choke these motors

Westinghouse Lint-Free Motors are designed for individual drives on pickers, winders and roving, spinning and twisting frames.

Special design insures clean, cool, continuous operation...prevents shutdowns...loss of time.

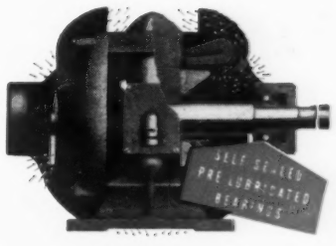
Lint-Free Westinghouse Textile Motors solve one of the most troublesome problems in textile mills—the problem of lint interference with production drives.

Westinghouse Textile Motors are designed to use large volumes of lint-laden air for cooling, without permitting any lint to collect inside the motor. Air passages are exceptionally large. There are no pockets or corners where lint might cling—inner surfaces have a slick, smooth finish.

In addition, motor bearings are factory-lubricated and factory sealed. The grease stays in—lint and dirt stay out. No recurring "grease spots" to invite lint accumulations.

Thousands of Westinghouse Lint-Free Motors are in daily use in round-the-clock operation. For production with less delays, less motor maintenance cost, see Westinghouse. Your representative can give you the complete story. Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., Dept. 7-N.

J-21216



The cleanest running motor in the textile industry. Note the large unobstructed air passages — the compact, sealed ball-bearing construction.

Westinghouse

LINT-FREE MOTORS

Why risk Interruptions

IN AUTOMATIC CONTROL?

It's easy to *play safe* with Quick-Check Maintenance Cards!

Have you ever considered what it would mean to operate your plant without automatic temperature controllers? More work . . . more waste . . . curtailments in output!

Foxboro now offers you an easy way to forestall neglect, or accidents to instruments that might necessitate such costly operation. Without charge, you may obtain Foxboro Quick-Check Cards outlining essential maintenance steps for each major type of instrument in your plant.

Attached to your installations or conveniently filed, these 9" x 11" Quick-Check Cards map out an easy routine that will keep instruments operating at top efficiency for the duration . . . save the uncertainties of wartime replacements or repairs . . . help to prevent interruptions in instrument performance. Equally useful for Foxboro or any other standard instruments.

Write us, specifying all different types of instruments you use. **The Foxboro Company, 18 Neponset Ave., Foxboro, Mass., U. S. A.** Branches in principal cities of U. S. and Canada.

★ ★ ★

This typical Quick-Check Card gives complete instructions "in a nutshell" for easy maintenance of Temperature Controllers and precision Control Valves of any standard make. Similar cards available for all major types of instruments.

RECORDING • CONTROLLING • INDICATING

FOXBORO
REG. U. S. PAT. OFF.
Instruments

"Much has been done, more must be done, for Victory"

from the speech of our President and General Manager
JOHN F. TINSLEY

"WE recognize that the Army-Navy 'E' award to us is a 'pat on the back' to acknowledge, in a solemn way, some things we have done ★ We know that our Country has a greater job to do in the future ★ The encouragement of Uncle Sam's approval of what we have done will help us to do more ★ We propose to see that no looms are idle because of lack of our efforts ★ We propose to see that our other War jobs are delivered to the best of our individual efforts."

Written by

The Employees of CROMPTON & KNOWLES LOOM WORKS

PICKER REPAIR PARTS WHEN YOU NEED THEM

WE keep on hand a very complete stock of all parts for Kitson pickers, and can usually ship the same day an order is received. We also can furnish beaters, ball bearings, screens and many other parts for other makes of pickers.

Under wartime conditions, it is of the utmost importance to keep machines running constantly and to be able to get prompt delivery on repair parts for keeping them running constantly.

In an emergency, a telegram or a telephone call will have the necessary repair parts at your plant the following day.

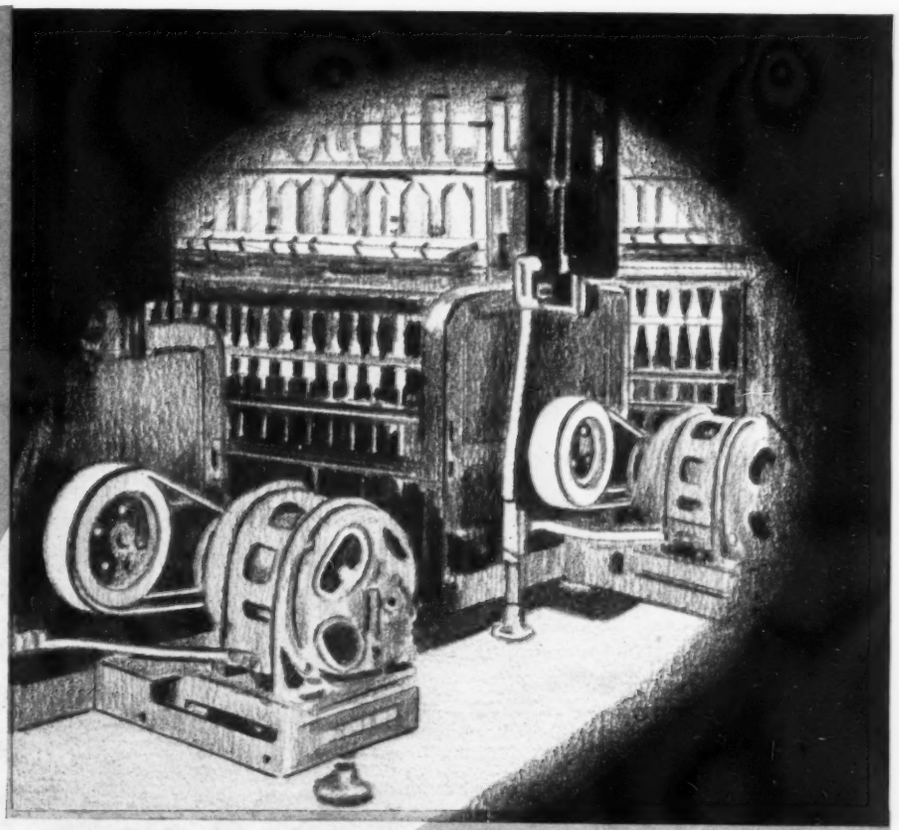
It is also a good idea to check your stock room and order picker parts on which the stock is low or is exhausted.

We can completely rebuild your pickers exactly like new, and when pickers are practically worn out and in need of more than ordinary repair parts, they can be completely renewed at far less than the cost of new machines with new frames.

AldricH MachinE

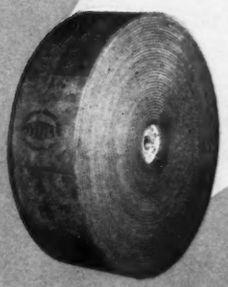
Greenwood, WorkS South Carolina

The Spotlight-



. . OF CONTINUOUS OPERATION HAS PROVED PIVOTAN'S TOUGHNESS!

The textile industry's war program has necessitated continuous operation in many mills, with an added strain on machinery and equipment. In this crucible—PIVOTAN leather belting is proving its ability to withstand, not only the extreme speed and rapid-flexing imposed on short-center drives, but the steady grind of *continuous* use.



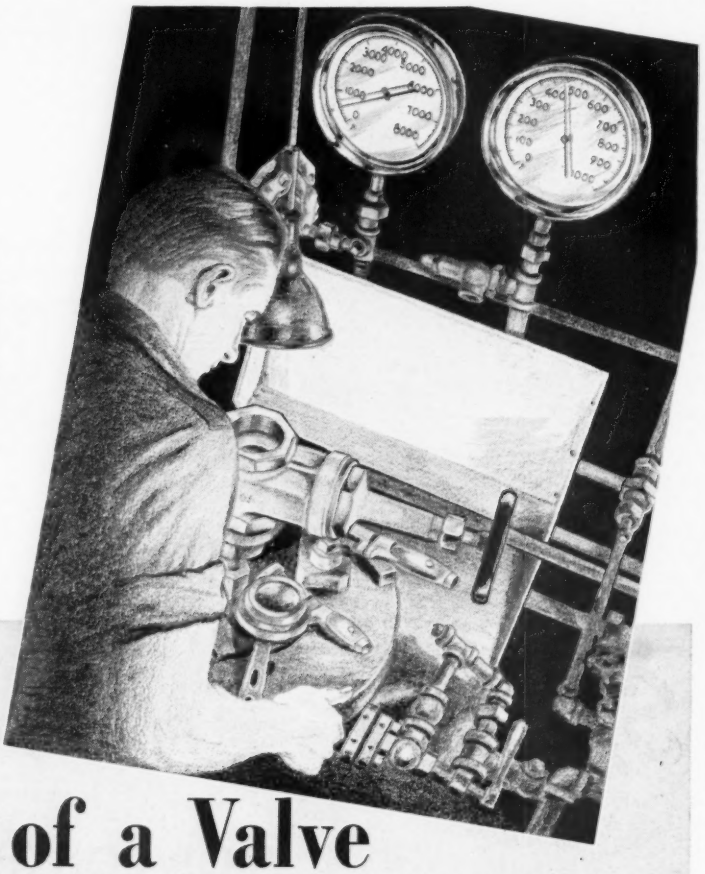
The *plus* wearing and gripping qualities of PIVOTAN make it of equal added value on fixed center drives, as well as on pivoted motor drives.

PIVOTAN is a new type of leather belt, especially tanned, curried and matched—under rigid laboratory control—to provide efficient, dependable and economical transmission of power.

RAPID—FLEXING . . LONGER—WEARING

PIVOTAN LEATHER BELTING

Manufactured by SOUTHERN BELTING COMPANY
Atlanta, Ga.



Every Lunkenheimer valve is regularly tested on both sides at low and high pressure for seat tightness, and then given a shell test. The slightest leak causes rejection. Test pressures far exceed rated pressures.

But

The Final Test of a Valve . . . is Performance

How does it hold up in service? Does it stand the gaff of hard usage? Is it dependable? Is it economical to use? How does it stack up in lasting qualities? The answers to these questions are the final and only convincing test of a valve. Ask any production man.

Now, when performance is more important than ever, when unnecessary time out for repairs is waste, and new valves aren't so easy to replace, valve users are profiting from their foresight in buying Lunkenheimer.

Rigid testing procedure is but one of the many precise steps in manufacture by which Lunkenheimer has maintained valve quality through the years. These steps are your assurance that Lunkenheimer Valves will give you more in uninterrupted performance for today's non-stop production schedules.

Since virtually all materials used in the manufacture of valves are on the list of critical materials, valve users are urged to furnish the highest possible preference ratings and proper "end use" information on their orders. This will be of mutual helpfulness.

ESTABLISHED 1862
THE LUNKENHEIMER CO.
"QUALITY"
CINCINNATI, OHIO. U. S. A.
NEW YORK CHICAGO
BOSTON PHILADELPHIA
EXPORT DEPT. 318-322 HUDSON ST., NEW YORK

LUNKENHEIMER VALVES

LOUIS ALLIS

A Size and Type Electric Motor for Every Industrial Requirement

THE LOUIS ALLIS CO., MILWAUKEE, WIS.

BUY WAR BONDS — BUY THEM REGULARLY.

268 capable and well equipped motor specialists stand ready to give prompt and efficient service on Louis Allis motors should the need arise.

They are located in about as many strategic spots throughout the entire United States.

A generation of constant effort has been spent organizing this army of motor-service "minute men."

Time and time again they have proved their merit by giving almost unbelievably quick emergency service—even in some of the most isolated spots in the country.

To machinery manufacturers especially—whose products are shipped to all parts of the country this type of service is invaluable.

THE LOUIS ALLIS CO., MILWAUKEE, WIS.

BUY WAR BONDS — BUY THEM REGULARLY.

These Packages SAVE ENOUGH METAL for 100 TANKS

Ingenuity of the highest order was called for when leading tobacco manufacturers asked Old Dominion to design a package of non-critical materials to replace their pound and half pound metal tobacco cans.

Speed was imperative. The package had to meet some rigid requirements. Among them were: adaptability to filling equipment—moisture retention – strength—appearance—and no change in over-all dimensions.

Though time was short, Old Dominion packaging engineers developed a paper board canister which met every specification PLUS other advantages – saving in weight – revenue stamp application simplified – improved appearance.

Millions of them are being produced – saving enough metal to build 100 tanks for Victory.

If YOU Have A PACKAGING PROBLEM Call On

OLD DOMINION BOX COMPANY

CHARLOTTE, N. C.

PLANTS IN SEVEN SOUTHERN CITIES

Folding Cartons-Set-Up Boxes-Spiral Wound and Corrugated Containers

PACKAGING THAT SAVES CRITICAL MATERIALS FOR THE NATION

SABOTAGE ... *from the air*

Sharp . . . jagged . . . destructive! Not bombs. Merely little specks of dust . . . but far from harmless, as high-powered microscopes would show.

It is easy to imagine what damage these hard, jagged particles can do to precision finished bearing surfaces in equipment ranging from delicate instruments to heavy machines. When a highly finished part must be scrapped because of dust-damage, much more is lost than just a piece of metal. Many hours of expensive, painstaking labor are completely wasted.

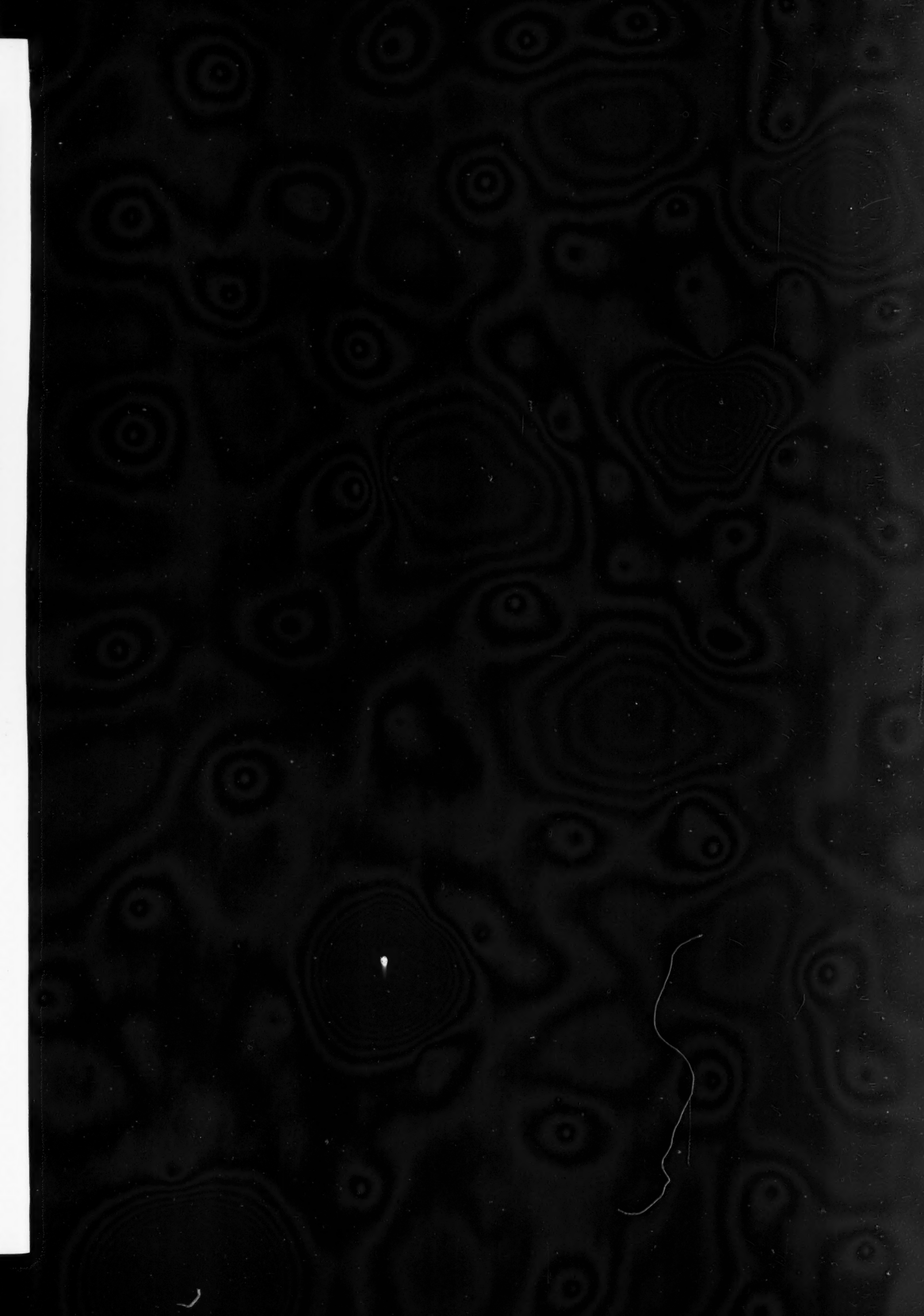
One of the best defenses against dust-sabotage is air conditioning . . . the specially designed kind of air conditioning which, through efficient air filtering and accurate control of temperature and humidity, is making possible precision tolerances never before attainable.

General Electric has taken an outstanding part in the development of this new air conditioning. Already, the war has taught us how to make equipment more compact, more flexible, and far more efficient. Required "climates" are faithfully reproduced. When the war is over, air conditioning... better, cheaper, more universally used... will do much to make the world of the future happier and more useful for everyone. Then, as now—General Electric will be a leading source of all kinds of air conditioning.

Air Conditioning and Commercial Refrigeration Department, Division 431, General Electric Co., Bloomfield, N. J.

Air Conditioning by

GENERAL ELECTRIC



A bayonet scabbard that might have been a cone of yarn

In a time of peace this bayonet scabbard might have been a cone of yarn running on your loom. It is made of the plastic Tenite which, like Eastman acetate rayon, has its origin in cellulose acetate. In a bayonet scabbard dependability is important, and this one, in use by U. S. troops, is so tough as to be virtually proof against breaking, splintering or distortion. In a yarn, too, dependability is important. And, like Tenite, Eastman acetate rayon starts with cellulose acetate of exceptional purity and uniformity . . . is under scientific control at every stage of its manufacture . . . can be counted upon to do a wide variety of jobs, and do them well.

EASTMAN ACETATE RAYON

A. M. Tenney Associates, Inc. 10 East 40th Street, New York City, sales representatives for the Tennessee Eastman Corporation, Kingsport, Tennessee, subsidiary of the Eastman Kodak Company.

BIG-HUSKY-ACCURATE *is not enough!*

You've got to consider the "X" factor, too!

Sure, we make scales big, husky, and accurate. You've got a right to expect *that* from *any* good scale. But we at Fairbanks-Morse build something else into our weighing machines. We consider in the *design* of our scales—*the "X" factor!*

The "X" factor is composed of those things which cause inaccurate weighing, *not by the scale,* but by the men who use scales. In other words, the "X" factor in weighing is the *human* liability of inaccuracy.

Having designed and manufactured weighing equipment longer than anybody else in the world, it is only natural that we should know more about the causes of inaccuracy due to the "X" factor.

Consequently, you will find in our scales many little features, such as a pointer which rides *close* to the dial to avoid parallax, and numerals that have been selected for greatest readability. And if you want to completely eliminate the "X" factor, we'll provide a ticket printer which prints an indelible record, automatically.

If you have a weighing problem, or want to speed up your weighing operations, come where there is more experience. Ask Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago.

Fairbanks-Morse Scale Engineers, because they are industrial specialists, can be of greatest service in fitting weighing machinery into your production flow. For weighing while in motion, secrecy in weighing, or automatic operation, ask for their counsel.

FAIRBANKS-MORSE

DIESEL ENGINES
PUMPS
ELECTRICAL MACHINERY
SCALES
MOTORS
WATER SYSTEMS
FARM EQUIPMENT
STOKERS
AIR CONDITIONERS
RAILROAD EQUIPMENT

FAIRBANKS SCALES

Scales

MACBETH

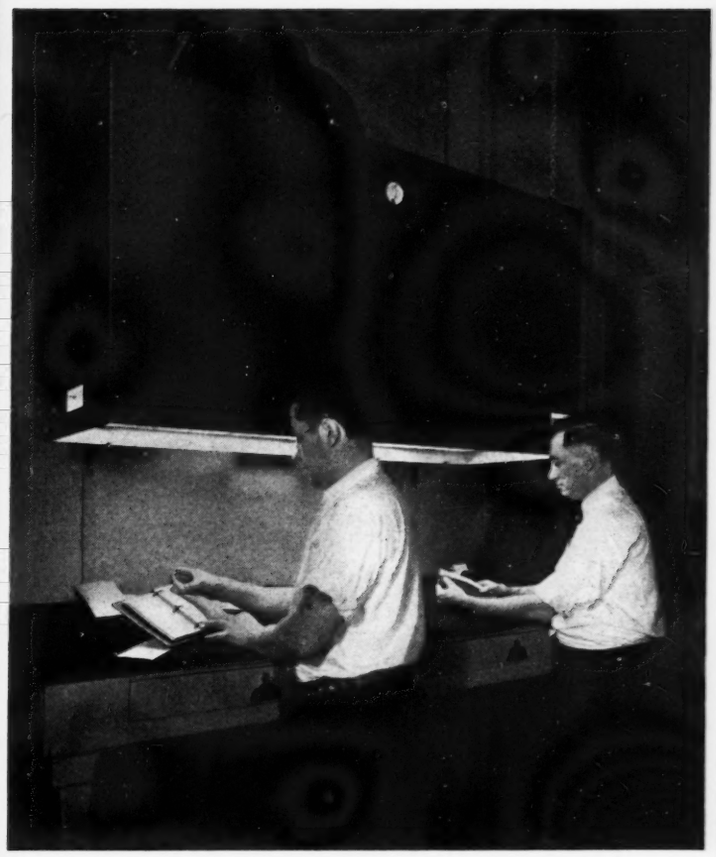


Photo Courtesy Julius Kayser & Co., Brooklyn, N. Y.

The recent installation of a new Macbeth Color Matching Skylight in the large Brooklyn, N. Y., plant of Julius Kayser and Company, for critical color matching represents the very latest development in daylight producing equipment.

The Kayser installation was primarily made to meet the requirements of the new "Tentative Specification for Standard Illuminants in Textile Color Matching" of the American Association of Textile Colorists and Chemists.

The use of the AATCC specifications, it may be emphasized, make it possible for mills and commission dyehouses to meet the critical color requirements of important government agencies and other large buyers of textiles.

Impartial lighting scientists and engineers agree that the new Macbeth Color Matching Skylights are the only available commercial equipment that meets the new specifications.

Investigate the possibilities offered by Macbeth Skylights for color matching work. Our engineers will be glad to work with you. Write for complete details—today.

We are able to make early shipments.

Macbeth Daylighting

MACBETH DAYLIGHTING CORPORATION

227 WEST 17th STREET NEW YORK CITY

HELPFUL SUGGESTIONS
Picked Up In and Around the Mills

Streaks in cloth due to uneven division of heddles have been entirely eliminated by the use of Stehedco cotton frames with T 12 slide hook. Try them.

Warp breakage in weaving flake yarn reduced 80% by use of Stehedco Heddles. Worth looking into.

Tom Brown says "Stehedco Drop Wires have the smoothest eye of any he has ever used."

More uniform tension, cleaner yarn, and longer life are obtained by using Stehedco chrome plated tension washers for quillers and warpers.

Stehedco fieldmen have assisted immeasurably many mills without obligation in changing over quickly and without confusion, to army suitings and other weaves. Can they help you?

It is no longer necessary to cut out tape selvage ends when leasing out. "Stehedco" short selvage harness eliminates this costly practice. Check into it.

Broken picks have been reduced 75% by use of Tempered Dogwood Shuttles with the new 54 cast iron eye. Investigate it.

Uneven beams on slashers can be eliminated by using Stehedco Positive Expansion Comb.

These and 100 other ills can be easily and quickly rectified by consulting with our field engineer located in your territory. No obligation. He is in your territory to assist you in just such problems. Make use of him.

Manufacturers of **Stehedco** *Products*

STEEL HEDDLE MFG. CO.

BRANCH OFFICES ALL OVER THE WORLD

Manufacturers of Superior
FLAT STEEL HEDDLES—HARNESS FRAMES—ALL TYPES OF LOOM REEDS—
TEMPERED DOGWOOD SHUTTLES—LOOM HARNESS ACCESSORIES
2100 W. Allegheny Avenue Philadelphia, Pa.

FIELD ENGINEERS IN EVERY DISTRICT

Caustic Soda

PROMPT SHIPMENTS

QUICK HANDLING

Penn Salt Liquid Caustic Soda is shipped in tank cars specially designed for speedier, safer unloading. These modern 8000-gallon tank cars have a protective lining, are insulated and are equipped with caustic resistant valves and interior fittings. They can be quickly and completely emptied—no wasted caustic, no lost time.

Penn Salt Caustic Soda is supplied as 50% and 72-73% solutions in tank car quantities; as a solid in 750 lb. drums; or in flake form in 400 lb. and 125 lb. drums.

Our technical staff is at your service for help with handling problems. Write for complete information. Pennsylvania Salt Manufacturing Company, 1000 Widener Building, Philadelphia, Pa. Branch Offices: New York • Chicago • St. Louis • Pittsburgh • Wyandotte • Tacoma.

PENN SALT *Chemicals*

THERE WILL ALWAYS be an "old home," its memory forever deep in the hearts of everyone. Our privilege is to keep its spiritual fire burning, constantly shedding its warm glow against the day our boys return from the many fronts. By showing unselfish devotion day by day throughout this New Year we shall prove worthy of this trust.

HOWARD BROS. MFG. CO.

Harry C. Boley.

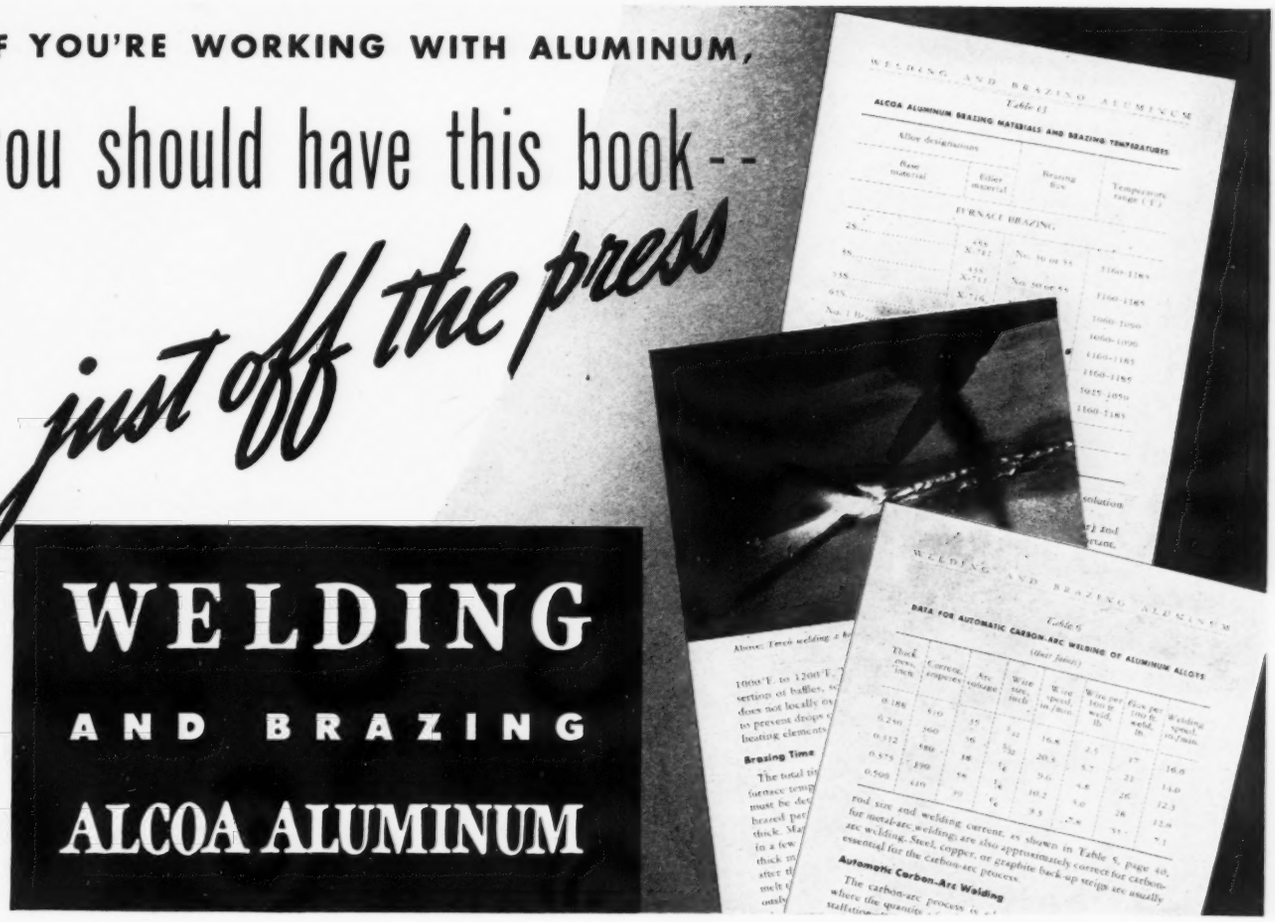
President

Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards—Napper Clothing, Brush Clothing, Strickles, Emery Fillets. Top Flats Recovered and extra sets loaned at all plants—Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant—Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles.

IF YOU'RE WORKING WITH ALUMINUM,

you should have this book--

just off the press



Here's a book of data designed to meet the needs of the practical man—the welder—who is working with Aluminum Alloys. It describes in detail the practices now widely employed for joining Aluminum parts by gas welding, arc and resistance welding, and by brazing.

This book is planned to assist the war effort by making every welder more proficient at his job. Typical subjects covered are: Welded joint design—preparation of parts—types of welding equipment—electrodes and fluxes—tip selection and flame adjustment—inspection and finishing—strengths of welds.

Joining Aluminum Alloy parts by welding and brazing is readily mastered with knowledge like this at your command, plus a little practice. You may have this book free. Use the coupon to send for your copy today.

ALCOA

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA,
1939 Gulf Bldg., Pittsburgh, Pa.
Please send me this new book.

Name_____

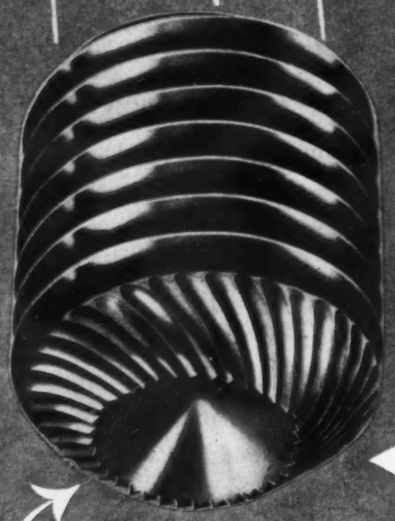
Company_____

Street_____

City_____

Wherever you need a Cup-Point Set Screw that.....

STAYS PUT



Pat'd. and Pat's. Pend'g.

See the Point

UNBRAKO

Reg. U. S. Pat. Off.

Self-Locking HOLLOW SET SCREWS

with the Knurled Points

WON'T WORK LOOSE and INTERRUPT PRODUCTION

Just tighten an "UNBRAKO" Self-Locking Set Screw in the usual manner and the *knurled points* "dig in" and prevent the screw from "backing out". Here is the dependable way to avoid breakdowns and maintenance costs resulting from set screws working loose. Screws can be removed with a wrench and used again and again. Deliveries are better than average.

The Knurling of Socket Screws originated with "Unbrako" years ago.

Sizes: No. 4 to 1½ diameter.

"UNBRAKO" WELT BAR SCREWS
—are uniformly strong and accurate. Used in leading mills throughout the Industry. Let us send you samples.

Write for Catalog Today

STANDARD PRESSED STEEL CO.

JENKINTOWN, PENNA. BOX 582

— BRANCHES —

BOSTON • DETROIT • INDIANAPOLIS • CHICAGO • ST. LOUIS • SAN FRANCISCO

RAYON REPORTS

Published monthly by American Viscose Corporation, New York, N. Y. VOL. 1, NO. 1. JANUARY, 1943

AN IMPORTANT PART of our 4-PLY SERVICE is that of bringing you news of important rayon happenings—new processes, new uses, new textile regulations. Since there are so many noteworthy things happening these days, we are starting a regular news letter in this issue. Future issues will appear regularly.

WAR NOTE—More and more rayon is going to the armed forces . . . in cord for tires for planes and cars . . . in bomb 'chutes . . . in equipment parachutes . . . in bullet-proof gas tanks, electrical insulation, and other vital uses. In addition, rayon is helping Latin American good neighbors to keep their industry going . . . is helping to keep the hosiery industry going in this country as a definite part of the war effort. All this means that there will be less rayon available for civilian consumers . . . and more problems for merchandisers of rayon goods.*

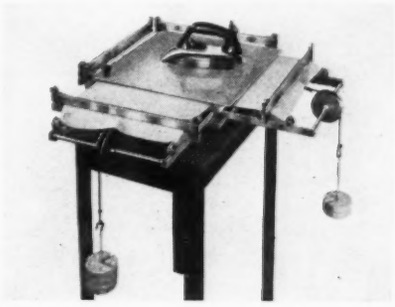
In view of this, we urge you to make the best use of available rayon yarns. Make wearable, durable, serviceable types of fabric. Don't exaggerate your requirements. Order only the amount of yarn or fiber that you will use. And don't hoard yarn. If you have a government contract, and have on hand yarns which you will not use in filling this contract, don't let them lie idle. Give the other fellow a chance to even out his production.

HELP FOR HOSIERY INDUSTRY

There has been an acute need in the hosiery industry for a yarn finish or size which would enable the trade to handle high twist in a single direction when using rayon yarn.

"Avconit," a finish for controlling high twist yarns, which was developed in anticipation of this need, is helping the hosiery industry through a transition period. It is considered by the trade to be about the best finish available for controlling high twist yarns.

Work on "Avconit" types of finish, even though already successful, is being carried forward in further research and experimentation.



NEW MACHINE FOR TESTING DIMENSIONAL RESTORABILITY

We're using a new machine for this important testing now. It was originated by U. S. Testing Company, and we find that it gives a more scientific, accurate prediction than any other test now used. Write us for complete information regarding machine and method.

NEW USES FOR "AVISCO"

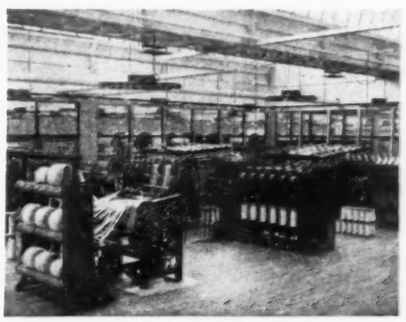
"Avisco" high tenacity rayon staple is now going into a lot of new articles—men's shirts, underwear, pajamas, and neckties; men's and women's handkerchiefs and hosiery; women's dress fabrics and knitted underwear; babies' diapers. And—lint-free spun rayon wiping cloths for high-grade optical instruments used by the Army and Navy.

BETTER FIBER FOR CARPETS AND BLANKETS

A smooth cross-section rayon staple with improved properties—"Tufton"—has been evolved for use in the above field. Field tests have been approved by two manufacturers. We invite others to test this new rayon staple.

RAYON BRISTLES FOR PAINT BRUSHES

Research starting in December, 1941, has resulted in satisfactory bristles now being produced commercially from 150 denier Bright CROWN rayon yarn beamed in the Textile Unit.



TEXTILE UNIT NOW EQUIPPED FOR WOOLEN, WORSTED SPINNING

Our Textile Unit at Marcus Hook, Pa., has just about any kind of textile mill equipment that you can imagine. We have recently added woolen and worsted spinning equipment for experimentation and research devoted to the solution of mill problems. Here's free practical assistance to mill owners and operators. Have you a tough nut to crack? Our technicians would be delighted to try to help solve the problem.

*Reg. U. S. Pat. Off.

Copr. 1943—American Viscose Corp.

4-PLY SERVICE . . .

Fiber research, which helps you get the right yarns; *fabric development*, which helps you design new fabrics; *mill technique*, which helps you solve mill problems; and CROWN Tested, which gives you scientific performance facts on finished fabrics containing CROWN Rayon—are all part of our 4-PLY SERVICE. All are designed to help you make the best possible use of the available yarns and fibers. Make use of the 4-PLY SERVICE!

AMERICAN VISCOSE CORPORATION

Producers of CROWN* *Rayon Yarns and Staple Fibers*

Sales Offices: New York, N. Y.; Charlotte, N. C.; Providence, R. I.; Philadelphia, Pa.

Plants: Marcus Hook, Pa.; Roanoke, Va.; Lewistown, Pa.; Nitro, W. Va.; Parkersburg, W. Va.; Meadville, Pa.; Front Royal, Va.

Dear Pop:

Even an old Rainbow Divisioner like you would pop your eyes at the army we're putting together this time. Let me tell you, they're doing everything to make up just about the best bunch of fighting galoots you ever saw.

And that goes for what they do for us off duty, too! Take this new clubhouse we got just outside of camp. It's got radios, dance floors, nice soft chairs and everything. And, Pop, you can get something to eat that won't cost you a month's pay!

Now, the army isn't running this. The USO is. And most of the other camps got USO clubs too, because you and a lot of other folks dug down and gave the money to the USO last year.

But, Pop, you know what's happened since then. Guys've been streaming into uniform. Last year there was less than 2 million of us. This year there'll be 4 million. And the USO needs a lot more dough to serve that many men—around 32,000,000 bucks I hear.

Now, Pop, I know you upped with what you could last time. But it would sure be swell if you could dig into the old sock again. Maybe you could get some of the other folks in the neighborhood steamed up, too.

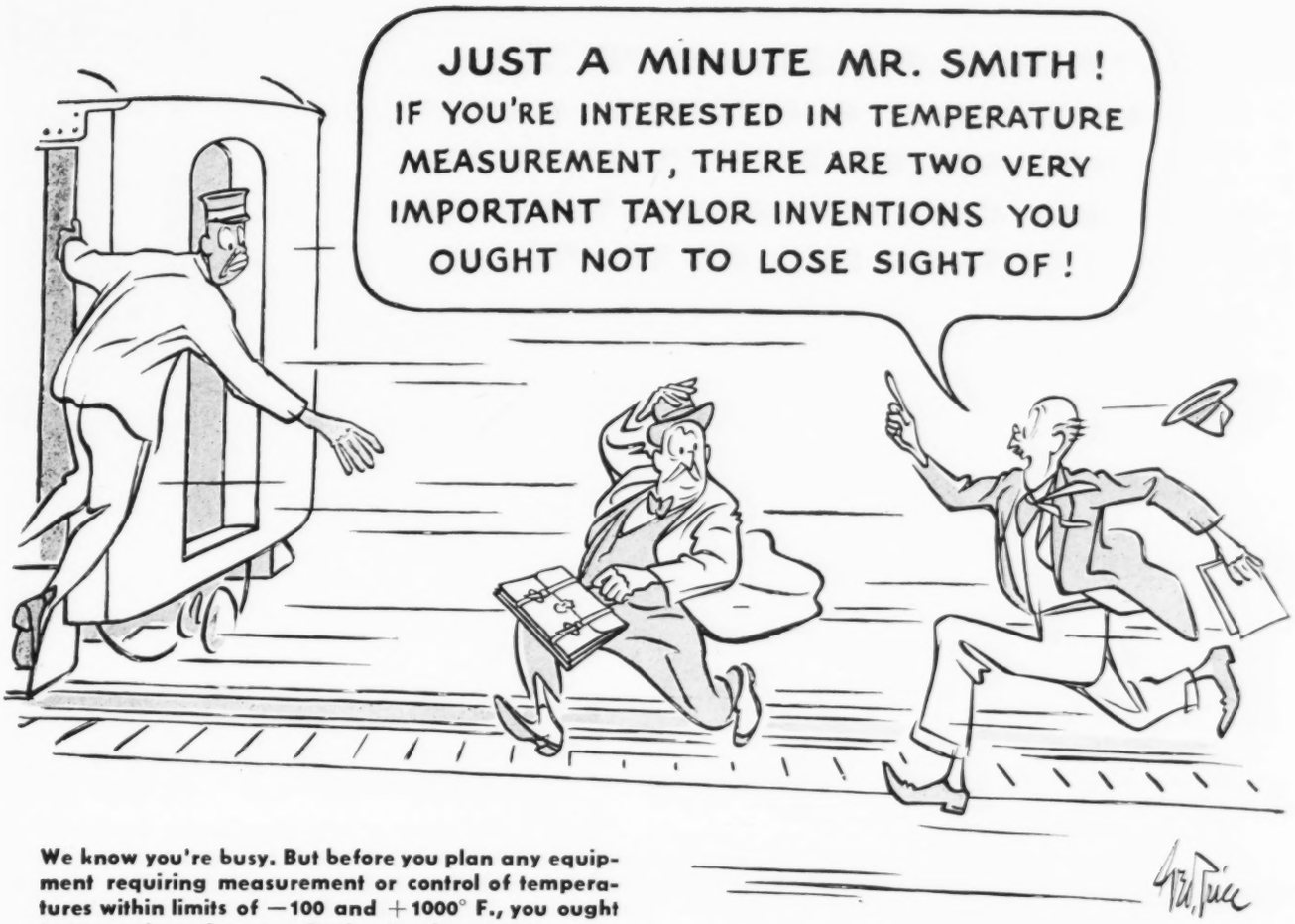
It will mean an awful lot to the fellows in camp all over the country. Sort of show 'em the homefolks are backing them up. And, Pop, an old soldier like you knows that's a mighty nice feeling for a fellow to have. See what you can do, huh, Pop?

Bill

GIVE TO THE

USO

Send your contribution to your local USO Committee or to National Headquarters, USO, Empire State Building, New York, N. Y.


JUST A MINUTE MR. SMITH!
IF YOU'RE INTERESTED IN TEMPERATURE MEASUREMENT, THERE ARE TWO VERY IMPORTANT TAYLOR INVENTIONS YOU OUGHT NOT TO LOSE SIGHT OF!

We know you're busy. But before you plan any equipment requiring measurement or control of temperatures within limits of −100 and +1000° F., you ought to know about these two Taylor developments:

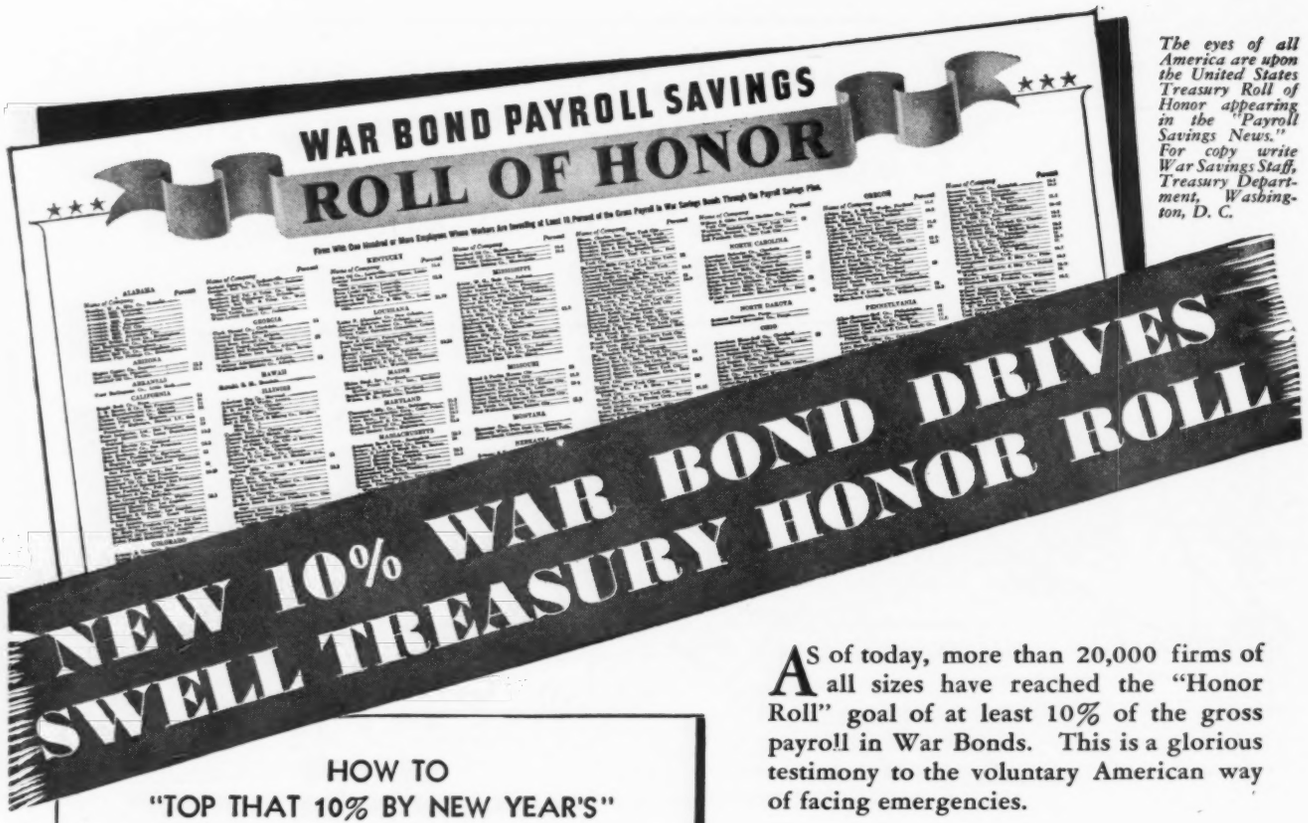
1. Mercury tubing that can't tell a lie! Imagine being able to have all the advantages of a mercury-actuated recording thermometer—on an application requiring long lengths of connecting tubing! It's long been an established fact with Taylor Accuratus Tubing. This precision-bore tubing, a Taylor invention, has a special alloy wire inside, with a coefficient of expansion so related to the tubing and the mercury that any variations in ambient temperatures along the way are counteracted on the spot. The result is *accurate* temperature recordings.

2. Accurate temperatures several times faster! Where a separable well is required to protect the temperature-sensitive bulb from erosion or corrosion (or to permit removal of the bulb without disturbing the contents of the equipment) there always used to be a considerable time lag in transmitting temperature changes to the bulb. But that was before Taylor "Thermospeed" came along. With Taylor Thermospeed Separable Well construction, response is several times faster than the average separable well tube system, with minimum bulb conduction error.

CALL YOUR TAYLOR FIELD ENGINEER. These are only two of the many "plus-values" which have given Taylor its reputation for leadership in the temperature field. If you need indicating, recording or controlling temperature instruments, your Taylor Field Engineer will determine whether a mercury, vapor or gas-actuated system is best for your particular requirements. And from a wide variety of bulb and well constructions and connecting tubings at his command, he will specify the other details which assure the accuracy, responsiveness, and long life characteristic of Taylor Instruments. Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada. *Instruments for indicating, recording, and controlling temperature, pressure, flow, humidity, and liquid level.*

Taylor Instruments
MEAN
ACCURACY FIRST
IN HOME AND INDUSTRY

★ ★ ★ KEEP ON BUYING U. S. WAR SAVINGS BONDS AND STAMPS ★ ★ ★



The eyes of all America are upon the United States Treasury Roll of Honor appearing in the "Payroll Savings News." For copy write War Savings Staff, Treasury Department, Washington, D. C.

HOW TO "TOP THAT 10% BY NEW YEAR'S"

Out of the 13 labor-management conferences sponsored by the National Committee for Payroll Savings and conducted by the Treasury Department throughout the Nation has come this formula for reaching the 10% of gross payroll War Bond objective:

1. ***Decide to get 10%.***
   It has been the Treasury experience wherever management and labor have gotten together and decided the job could be done, the job was done.
2. ***Get a committee of labor and management to work out details for solicitation.***
   a. They, in turn, will appoint captain-leaders or chairmen who will be responsible for actual solicitation of no more than 10 workers.
   b. A card should be prepared for each and every worker with his name on it.
   c. An estimate should be made of the possible amount each worker can set aside so that an "over-all" of 10% is achieved. Some may not be able to set aside 10%, others can save more.
3. ***Set aside a date to start the drive.***
4. ***There should be little or no time between the announcement of the drive and the drive itself.***
   The drive should last not over 1 week.
5. The opening of the drive may be through a talk, a rally, or just a plain announcement in each department.
6. Schedule competition between departments; show progress charts daily.
7. Set as a goal the Treasury flag with a "T."

AS of today, more than 20,000 firms of all sizes have reached the "Honor Roll" goal of at least 10% of the gross payroll in War Bonds. This is a glorious testimony to the voluntary American way of facing emergencies.

But there is still more to be done. By January 1st, 1943, the Treasury hopes to raise participation from the present total of around 20,000,000 employees investing an average of 8% of earnings to over 30,000,000 investing an average of at least 10% of earnings in War Bonds.

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IN THIS ISSUE

Editorial—

It Won't Be Long Now 57
The Farmer's Problems 57
Contributions to War Effort 58
War Profits 58

General and Technical—

Winding Machines—Work Load Calculations, (Article 1), by J. W. Stribling 59
Plastics Add to Life of Army Tents 62
Water Repellent and Waterproof Finishes for Textiles (Article 2), by Eric Croen 63
Co-operative Goodwill, by W. M. McLaurine 67
An Overseer's Bulletin on Cost and Related Factors 68
Supplies Saved Today Prevent Serious Shortages Later 69
Alabama Men Discuss Carding and Spinning in "Meeting by Mail" 70
Care of Electric Motors 73

Current Textile Topics—

Talk of the Month 74
New England Mill Situation 75
"The Situation" as Seen Across an Executive's Desk 76
Crompton & Knowles Gets Army-Navy "E" 82
Timely News Items with a Textile Slant 84
New Publications of Textile Interest 84
A Review of the Cotton Waste Market 84
What the Textile Mills are Doing 88
Comment on the Cotton Market 90
New Equipment and Materials 92
Obituary Items 92
Personal Notes about Men You Know 94
An Old-Timer Says— 99
Shorts and Remnants 55

How Other Men Manage—

Standard Strength of Single Yarns? 103
Do Overhead Cleaners Increase Ring Wear? 103
Springs to Condense the Card Sliver 103
Comments on Long Draft Roving and Spinning 104
Timing the Harness 106
A Unique Beater 106
Twist in Roving 108

Knitting Section—

Training Female Operators on Full-Fashioned Machines, by Earl Roberts 117
Labor-Management Board at Hemphill 124
The Links-and-Links Knitting Machine (Article 23) 126
Trends and Highlights of the Knit Goods Markets 133
Forecast 134
Trends—Yarn Markets 138

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Any grizzled top-kick will tell you there's no short cut to know-how.

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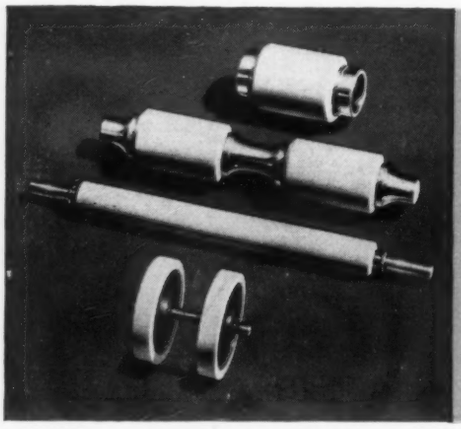

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SHORTS AND REMNANTS

"MORE WITH LESS" Theme of PTC and ALBA

Mr. French

Mr. Moore

Mr. Key

The relation of planned power transmission to war-time production and the necessity for doing more with less in maintaining plant production were emphasized in the recent annual meetings of the Power Transmission Council, Inc., and the American Leather Belting Association. Both organizations stressed the work they are doing in maintaining present power transmission facilities. W. W. French, director of engineering and sales promotion of Dodge Manufacturing Corp., Mishawaka, Indiana, was re-elected president of the Council and presided at their annual dinner. Roy C. Moore, of Charles A. Schieren Co. of New York, was elected president for the leather belting manufacturers, succeeding Ernest Key, of the Atlanta Belting Co., who has held this position for the past three years. At the annual meeting of the latter Association, emphasis was placed on a recent booklet which has had particularly wide circulation. This is "How to Get the Most from Your Leather Belting" and is available from the Association headquarters, 53 Park Row, New York City.

M & M—February, 1943

Our annual February issue, usually devoted to Modernization and Maintenance, will for 1943 be dedicated to Manpower and Maintenance. With the bulk of textile production for 1943 scheduled to go into equipment for our Armies and Navies fighting in every corner of the globe, it is all-important to keep machinery and plants running at top capacity. February will feature the experiences and comments of progressive plants throughout the textile industry as to how they are meeting present-day problems and maintaining production. It is significant that far-sighted manufacturers are preparing and maintaining machinery to the best of their ability to avoid break-downs; also that they are keeping up staffs, physical properties and using all facilities to maintain production with the least possible use of critical materials. In this, much valuable aid is being rendered by manufacturers of machinery and supplies. Look for the February issue.

Forty-Year Orchids to "Park's Parables"

The January issue of "Parables", issued by Parks-Cramer Co., of Fitchburg, Mass., marks the start of the fortieth year of this publication. Congratulations to Mr. Robert S. Parks and orchids to him for starting and carrying on this company publication throughout the 40 years. Maybe it's a hangover from the Christmas spirit or just a general beneficent feeling prompting a good word from a trade publication to a "house organ". Forty years is a long time and Mr. Parks gives due credit to the part advertising has played in the building of present air-conditioning equipment business. Incidentally, the January issue embraces in an interesting way the steps that have led up to modern textile air-conditioning. You almost have to look back over forty years to appreciate the enormous accomplishments in this particular field since the turn of the century.

After the War

"The goblins will get you if you don't watch out". Many readers will recall the scary poem of James Whitcomb Riley with which mothers used to frighten their children into being good boys and girls during the early part of the century. The same note is prevalent now in the doleful forecast of many who are looking forward to the fearful days after the war.

In the first place, there isn't anything as bad as the anticipation thereof (not even a visit to the dentist). In the second place, there can't be too much to worry about in a country that has the brash optimism to figure the war ending in 1943 or early 1944 which is the usual forecast for the doleful aftermath.

Also, there can't be too much to worry about in a country with the desires, manufacturing ability and ingenuity of our own U. S. In one meeting not so long ago, it was mentioned that the doleful forecasts were based on the fact that the United States had built up to a point where they didn't have room to expand and that their machines had cut down on the amount of labor to the point where there could never be jobs for anyone again. Based on this same theory, the Indians would have been the most prosperous people in our history because they had plenty of room and no machines. Just stop and think how many millions of people in the United States still desire and want things which we have the ability and machinery to produce. It isn't too far-fetched to believe that present war production could be converted to manufacturing products to raise the standard of living still further.

You know, most of us can remember horses and buggies, gas lamps, no radios, electrical appliances, etc. Boy, oh boy, if somebody will only figure out a preventive for warfare, we'd like to stick around until we are 100 just to see the miracles that are going to take place in the next generation. Even if they can cut it down to a little ordinary feuding now and then, we'd still like to be around.

For our money, they'll even come closer to doing this if they put a sign up over the door leading to the peace table saying "No One Over 75 Allowed Unless Accompanied by Their Parents". No more gray beards, no more old hatreds and old feuds—if we still get them it would be a crop of new ones, anyway.

The Man from Montevideo

George Mackern, of Montevideo, Uruguay, has flown home after about seven months in the United States. He is manager of the Montevideo plant of S. A. Fabrica Argentina de Alpargatas, and most of his time here was spent in Washington, conferring with government officials there with respect to equipment for a spinning mill in Montevideo. He spent Thanksgiving Day with us in Atlanta, and is shown here, between (right) J. B. Brennen of The Centrif-Air Machine Co., and (left) J. Carlile Martin in the editorial rooms of "Cotton".

You Don't Have to Have A Ration Card to Use Your Electric Service

ELECTRIC power is the only essential of war production not on the critical list. Electricity enters into the manufacture of every material of war. It is used in making planes and tanks, guns and ships, bombs and bullets. It goes into the production of the soldier's arms, his clothing and his food. The demand for electric power has been multiplied enormously as a result of the war program.

In Georgia, as in other parts of the nation, there is no rationing of electricity—in spite of the unprecedented demand for power for the war plants. It is still available for all who wish to use it. In factories, stores, filling stations, office buildings, warehouses, hotels and other businesses, the use of electricity is unrestricted.

And in the home, too. We have sugar coupons, gasoline coupons, coffee coupons. But not electric service coupons.

And the price, too, is as low as ever. There has been no increase in rates for any type of service.

No industry has better met its obligations to serve the American people whether in peace or war.

Georgia Power Company

COTTON
SERVING THE
Textile Industries

Vol. 107 January, 1943 No. 1

It Won't Be Long Now

THE BIG CLOUD on the economic horizon at this writing seems to be the demands of the railroad labor unions for wage increases. This is the first nationwide, concerted effort on the part of any one large group of people to blow the price ceilings right through the roof and knock all wartime price controls into a cocked hat.

The railroad unions have modestly asked for a mere 30 per cent wage increase for most of their membership, and perhaps a trifle more than this for some of it. Of course, they don't expect to get this much, but that is immaterial as far as the final results are concerned. If they get anything, the lid is off. Unless the Government authorities who are charged with the responsibility of holding down prices can muster courage enough finally to say flatly that there will be no more blanket price increases for any group for any reason, they are wasting their time trying to control prices. The amount that the railroad unions get is not particularly important. The fact that they could get anything will immediately result in every other pressure group in the United States coming up with its hands out.

The farmers are still chafing under some of their restrictions, and at this writing a bill is pending in Congress to permit farmers to raise the prices of their products by allowing them to figure their additional wage costs in figuring "parity". Such a provision could easily increase farm prices very considerably, and that of course would be seized upon immediately by labor organizations as an excellent reason for wage increases to labor. If this concession is made to the farmers and the railroad unions get away with their application for a boost in wages, there will be no reason why any other group can not reasonably demand additional compensation.

The railroads, in common with every other sort of business, have been making handsome profits out of the war. Any industrial organization which has its volume of business doubled is certain to make large profits. This is particularly true of the railroads, which have a practically fixed overhead and which for years have been victims of the featherbedding practices of the unions. That is, the unions have insisted on operating conditions which often provide two or three times as much help as is actually needed, so as to keep from having to lay off union members. Therefore, when railroad traffic spurts, the railroads are certain to make a lot of money. Several things could be done about this.

The Government could recapture most of the railroad profits by taxes, since most of these profits were made out of handling freight and traffic belonging to the Government. That would help fill the Federal Treasury and keep the cost of the war down.

The railroads could be allowed to keep some, or all, of this money for rehabilitating their plants, which are being seriously strained by the demands of the war.

The railroad rates could be reduced to keep the roads from making these profits. That would help to reduce the cost of living and also the cost to the Government for transportation.

All of these profits could be given to the employees of the roads in the form of higher wages. That is what the unions now demand, and is undoubtedly the worst thing that could possibly be done with the money, since it is a strictly inflationary proposition.

The Farmer's Problems

For the next few years, the farmers will have a tremendous role to play in our national economy, and yet they are being ground between the upper and nether millstones of wartime demands for manpower and industrial inflation. We now have a big national surplus of wheat and a fairly large surplus of cotton. Wheat and cotton are two staples that farmers like to raise because they are a quantity production proposition and much easier to handle than the perishables like fruits, vegetables and milk. These surpluses of wheat and cotton probably will disappear almost instantly as soon as the war is over, and very likely there will be an acute shortage of both within a few months after Europe begins to eat again and needs some clothes. There are millions of starved or semi-starved people in Europe who are going to need all of the wheat and other food that we can let them have, and we are going to have to let them have it because the war isn't going to be over until Europe is so thoroughly starved that the Germans can't fight any longer, and the only way to keep Europe from going completely to pot will be to feed it and at least help clothe it. As soon as Europe's ports are open and we have the ships available, we can expect to see our surpluses of wheat and cotton disappear almost immediately.

There is a present shortage of many foodstuffs,

and the situation is probably going to get worse instead of better. We are going to need more milk and milk products in 1943 than ever before, but dairy owners who are now desperately short of labor are in many instances selling their milk cows to be slaughtered, since they simply cannot get enough labor to take care of the cows, and work in a dairy has to be done now; not later. You can't put it off like picking cotton or harvesting wheat. We are going to need enormous vegetable and fruit crops in 1943, but those are the crops which take the greatest amount of hand labor, and this labor is unobtainable.

The farmer is up against a problem that he probably can't lick without the kind of help that he probably is not going to get. The farmers can't compete with the enormous industrial wages which are tempting farm hands into the city, and if the prices of many agricultural commodities were doubled, the farmers still couldn't compete with the shipyards and munitions plants.

Yet somehow, the farmer has got to produce. Not only do we need his produce as a necessary part of the war effort, but one of the most powerful agencies for combating inflation is a plentiful supply of food and other farm products at reasonable prices. If these things get scarce while pockets throughout the nation are stuffed with money, all the Army and Navy put together can't keep down the cost of living. Only, if there is plenty of food for everybody, can we make any pretense of controlling the cost of living. There can't be plenty of food for all if the farmers don't raise it, and the farmers can't raise it if a million or so of their prospective hands are roaming around the country looking for jobs at $100 a week. There are no statistics on how much of this roaming around for jobs is going on, but the southern cotton mills have lost many thousands of their hands who have gone into war industries, and are replacing these principally with green help off of the farms. Several mills have reported a large surplus of unskilled or semi-skilled help, satisfied with getting two or three days of work a week in the mills in preference to working on the farms. One large mill organization reports that their training school expense for new help is $3,500 a week. Most of this goes to the training of former farm hands.

The officials who are charged with trying to straighten out the farm manpower mess have a job that bids fair to defy straightening out. It is a mess which has been caused by economic pressure that the farmers cannot withstand. These are economic pressures which, like so many others, should never have been brought to bear, but they are now bearing down on the farmer relentlessly. Unless this pressure is relieved, the farmer is not going to be able to produce as much as he should and if he doesn't produce it, most of us are not going to have enough to eat, and that is a situation that concerns everybody.

Contributions to War Effort

Every little while some public figure speaks glowingly of the wonderful contribution this, that, or the other group has made to the war effort. The standard dictionary defines "contribute": "To supply as part of a common stock; give in aid of some object"; and "contribution" is defined as: "A gift; subscription". This has always been our conception of the proper meaning of these words, and we can't see that something which has been sold at an exorbitant price could be called a contribution, or that the seller of something at an exorbitant price could be spoken of properly as having contributed anything.

As we mentioned last month, the textile industry has done a marvelous wartime job, and so have the railroads. The automobile industry has done a magnificent job of turning out war materials. Most industries have done a good job, but it is just a job; it is the same kind of job they would have done under any other circumstances that afforded the same opportunities for production and profit. The real contributions have so far been few and far between. Nearly everybody wants to get something out of the war; not put anything into it. This attitude is particularly noticeable on the part of organized labor, which has thus far been strictly on the receiving end so far as the war is concerned. If organized labor has made any positive contribution to the war effort, it has been so inconspicuous as to escape our attention. Organized labor has sold its services for the highest wages that it has ever received, and in instance after instance, has flatly refused to contribute anything, but has insisted on demanding more. The one big contribution that organized labor could have made was the abolition of the 40-hour week with the punitive overtime rates. This would have been a real contribution, which would have lessened the dangers of inflation, lessened the cost of the war, and heightened the respect of the American people for the labor organizations, which have been steadily losing the respect of the rest of the people. This contribution was not made, and labor leaders with great unanimity have definitely stated that it is not going to be made, and that if it is requested, the request will be fought vigorously.

We can't run this war as a WPA project indefinitely. It must soon reach a stage where more people have to put in something and fewer take out.

War Profits

Those people who still think that there can be any wartime profits would do well to remember that a government never pays its debts; it can't, since it has nothing with which to pay. It merely extinguishes its debts through taxation. Its position is similar to that of a landlord who owned all the buildings in a whole community, and who had bought or borrowed from his tenants and paid them back by raising their rents and giving them the amount of the increase until the debts were extinguished.

Therefore, the more we let this war cost in money, the worse mess we will have after the war in trying to adjust the value of our money to our ability to extinguish this cost. The nearer we can come to paying for the war in money as we go along—

(*Continued on page* 106.)

Winding Machines—
Work Load Calculations

By J. W. Stribling

Field Engineer, Universal Winding Company

THIS BEGINS an extremely valuable discussion on a subject that has received too little attention—and on which little of a practical nature has been published. In a clear, practical way, and in mill language, the author shows how to pre-determine the number of spindles a winder operator should tend and the approximate production in pounds which she should turn off in a given time. Everything in this discussion is based on proven, practical experience. We urge all interested readers to preserve this and the subsequent installments.—The Editor.

THESE ARTICLES are to deal with the operation of winding machines from the standpoint of the human element and will not touch upon the maintenance, repairs, adjustments, or other mechanical details of such equipment.

It should be understood at the outset that we are to deal with hand-operated machines only, as the operation of automatic winders, where the bobbins are changed and the knots tied automatically, requires entirely different treatment.

Most spinning yarn mills, making yarns for sale to the trade, have hand-operated winding machines for putting the yarn on packages suitable for the customer to use on his knitting machines, in his warper creels, or on other equipment. Also, there are many mills using hand-operated winding as an intermediate process, such as winding single yarns on cones for warper creels or on tubes for twister creels.

The labor cost of winding in such mills is one of the largest single items in the total labor cost of the mill, yet it is surprising how little attention has been given in the past to the possibility of reducing this item. It is true that, under present conditions, there may not be much incentive to reduce costs, because practically all profits will go out in taxes anyhow. However, with help getting scarcer and scarcer, there is a great incentive today to operate a mill with the least possible *number of employees*. Consequently, it is felt that any ideas which may reduce that number will be of value.

In the old days, few scientific studies were made as to the actual amount of work involved in winding cotton yarns or as to the number of spindles which an operator could satisfactorily tend. It was simply a rule-of-thumb to give a girl "about 50 spindles" regardless of the yarn count or the yards of yarn per bobbin. As the modern high speed winder came into general use, mill managements began to show interest in these subjects, with the result that it is possible today, after years of scientific study and actual experience, to predetermine the number of spindles which an operator should tend and the approximate production in pounds which she should turn off in a given time.

Before going too far into such a

Starting up a spindle on a drum winder

discussion, it would probably be wise to cover first a few general details about the two principal types of winders, with the different principles involved; and possibly a definition or so will be in order, so that confusion will be prevented.

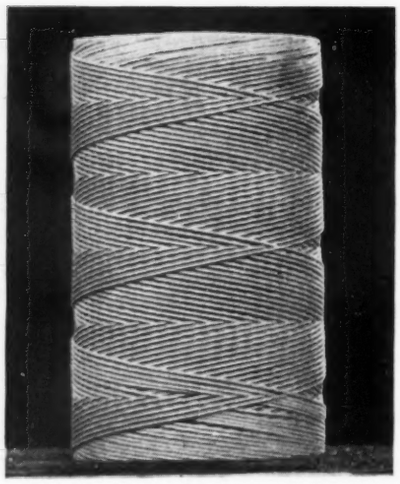
There are two general types of winding machines:

DRUM WINDERS, where the package is driven by frictional contact with a revolving drum with either a reciprocating thread guide or rotating traverse. This is the type of machine in most general use.

PRECISION WINDERS, where the winding spindle and the package turn at a uniform speed *in revolutions per minute.* On this type, the spindle speed is constant, but the yarn speed increases as the diameter of the package increases. This is in distinct contrast to the drum winder, where the yarn speed is constant, but the revolutions of the package decrease as the package fills up. These features will be dealt with in a little more detail later.

And now we come to a definition of the *number of winds,* a detail of winding about which there is confusion even among experienced operators of winding equipment:

The number of winds in a package is the *number of revolutions of the package to ONE STROKE* of the thread guide, or traversing mechanism.



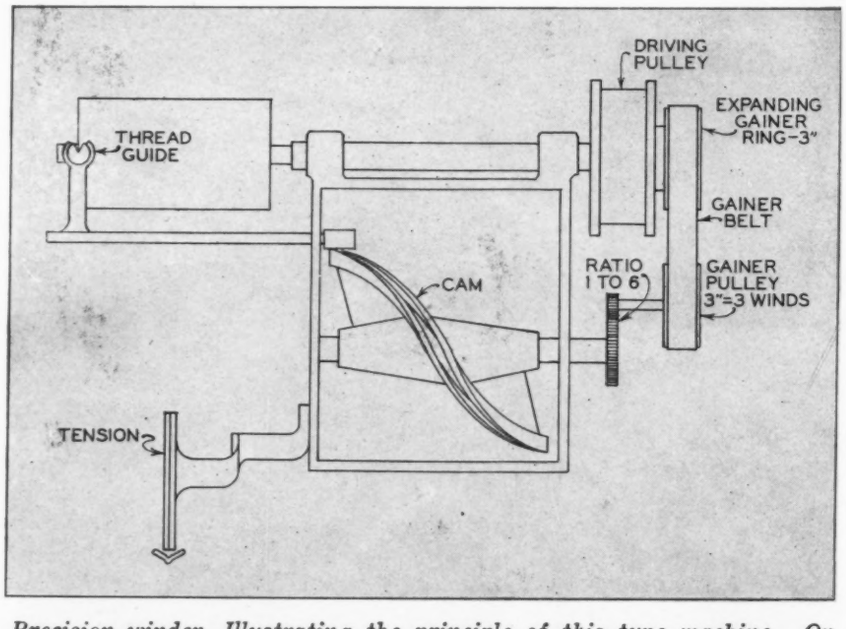
A precision-wound tube (3 winds)

For instance, a package is said to have *three winds* if the package makes three revolutions while the thread guide is moving from one end of the package to the other, which *is not* a complete revolution of the cam. To test the number of winds on a package, simply unwind the yarn and count the number of wraps you take off while going from one end of the package to the other.

And now back to drum winding for a moment. On this type of machine the yarn speed is constant, as the *surface* of the package is driven by the surface of the drum, which has a constant speed. Consequently, as the package fills up, the revolutions per minute of the package will decrease, thus changing the ratio between the speed of the package and the thread guide, or traversing mechanism. This means that, on a drum winder, the *number of winds* will decrease from the inside to the outside of the package. For instance, a drum-wound cone will start off with about three and one-half winds next to the paper and end up with one wind, or less, at the outside diameter.

On a *precision* winder, the package is fixed on the spindle, and since the spindle has a uniform speed in revolutions per minute, the yarn speed will *increase* as the package increases in diameter, but the number of winds will remain *constant.* This is because the thread guide and cam are driven positively by the spindle, which means that the relation between the speed of the spindle and the cam, or thread guide, will remain constant.

With these generalities out of the way, we now come to the actual operation of the machines. We shall deal first with drum winding, because that is the type of equipment in most common use.

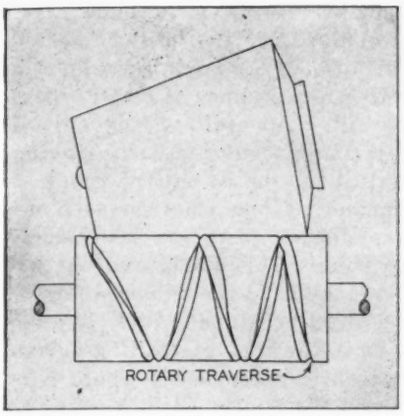


Precision winder. Illustrating the principle of this type machine. On some types, a cone-shaped pulley is used instead of the expanding gainer ring shown above

Drum Winders

As stated, the rule-of-thumb on old type slow speed drum winders was to give a girl 50 spindles regardless of the length of yarn on the bobbin. This meant that on long yardage bobbins the operator was not kept busy and wasted a great deal of time waiting for the bobbins to run out. In such cases her production was low and the piece rate high. On short yardage bobbins, usually very coarse yarn, the bobbins were exhausted much more quickly, with the result that the operator was kept busy all the time and her production was high, with the piece rate low. These conditions usually meant a graduated scale of piece rates from low on coarse yarns to high on fine yarns.

With the advent of modern high speed winders, management began to show interest in a scientific method of determining the actual amount of *work,* or *time,* involved in the different elements of winding yarns, from which could be calculated the production that an average operator should turn off on



Drum winder. Showing the rotary traverse type. The intersecting groove in the drum traverses the yarn from end to end of the package as the surface of the drum drives the package . . . .

any yarn and the number of spindles she should be allotted for that production. After years of study and numbers of time studies, the operations involved boiled down to the following:

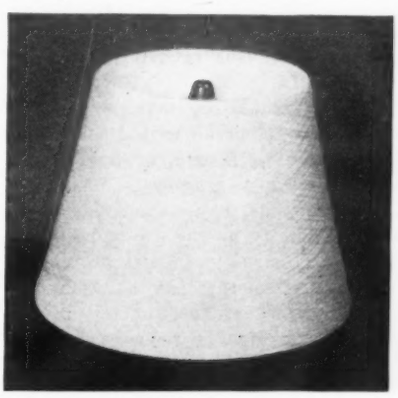
ELEMENTS

1. **Changing full bobbin:**
   a. **Remove and dispose of empty bobbin.**
   b. **Pick up full bobbin, find end, remove surplus yarn from base of bobbin, and place on supply spindle.**
   c. **Find end on package, tie knot, and start spindle.**
2. **Retie breaks. (Practically same as "c" above, because the broken end is usually found in the tension bracket.)**
3. **Gauge and doff full package.**
4. **Cleaning.**
5. **Fatigue allowance.**

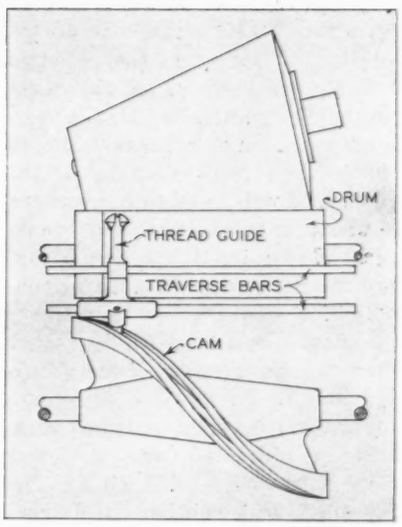
The times required for performing each of these elements will be fairly uniform for the range of yarn counts usually produced in a given mill, although it is recognized that there will be a difference between very coarse and very fine yarns. For example, it will take longer on 60s single yarn than it will on 10s, because the operator will have to be more careful in handling 60s to prevent breaking the end as she pulls the loose end from the package to tie the knot. Also, it takes more time to find the loose end on the package on very fine yarns. However, in a mill spinning from, say, 10s to 80s, the element times should be fairly uniform. If a mill is spinning from, say, 40s to 60s, the element times will be greater but the same times can be used for the range of counts.

With the times for the different elements remaining constant for a given range of yarns being produced, it is obvious that the total hand time required by the operator to wind *one bobbin* of yarn will be the same regardless of the yarn count in the given range, provided the end breakage is fairly uniform. This means that the production of the operator will depend upon the net weight of yarn per bobbin, practically regardless of the yarn count. Therefore, since an operator's production depends upon the weight of yarn on the bobbin, the piece rate for the given range of yarns will be the same, so long as the net weight of yarn per bobbin remains the same and the *end breakage remains fairly constant.* Consequently, if a mill is spinning from 10s to 20s on 2-inch rings, the net weight of yarn per bobbin will be fairly uniform, which means that the same piece rate can be used for the different counts which are spun on 2-inch rings. It is clear that 20s will have approximately twice the *yardage* of yarn per bobbin as will 10s. Therefore, an operator should tend about twice the number of spindles on 20s as she should on 10s, but her production will be approximately the same. The method of determining the number of spindles per operator will be fully covered later.

It can be readily seen that the major part of an operator's time is taken up by Element 1 (changing full bobbins), and Element 2 (tying breaks). The times for these elements will be fairly constant for the different yarns and for different operators. Therefore, about the first thing to be done is to determine the number of breaks per 100 bobbins of yarn, usually expressed in percentage. For instance, if the average of a great many tests shows 20 breaks tied up per 100 bobbins of yarn wound, the figure 20 per cent is used.



A drum-wound cone



Drum winder. Illustrating the type with a reciprocating thread guide. On some types, a cam with an intersecting groove is used instead of the conventional cam shown .

The importance of getting this figure as accurately as possible cannot be over-emphasized. The tests should cover a great many bobbins from many different spinning frames. A good method to use is to assign one man to the tests and have him follow one winder tender for several hours at a time. He should carry a pad and indicate each time the operator changes a full bobbin and each time she ties up a broken end. This is done continuously for several hours. Let us suppose that during the time he follows a certain operator his pad shows a total of 910 full bobbins changed and 182 breaks tied up. The end breakage is:

$$\frac{182 \times 100}{910} = 20 \text{ per cent}$$

He should then change over to following another operator and repeat the test. From the total average a figure can be obtained which will be accurate enough for the entire job, unless individual tests show too much variation.

These tests should be repeated from time to time to check on the quality of the yarn being spun and on the settings of the slub-catchers. Naturally, if the percentage of end breakage should change and remain changed, the piece rate will have to be changed to conform to the new end breakage. However, if the end breakage should go up, the natural consequence would be to investigate the cause and correct it rather than change the rate. If the breakage should go down and remain consistently lower, better spinning is indicated and a lower piece rate would be justified. The question of whether the rate should be reduced would be up to the management.

Element 3 covers the gauging and doffing of full packages. The time for this element will remain constant for the average range of yarns in a given mill, provided the net weight of yarn per package is constant and there is not much variation in the weight of yarn per spinning bobbin. If 3-pound cones are being wound, with 4 ounces of yarn per bobbin, there will be 12 bobbins per cone regardless of the yarn count. Therefore, the time for this element will be constant.

Element 4 covers cleaning. While the time for this element could be figured down to a bobbin basis, it is usually expressed as a percentage of the operator's total time and added in separately after adding up the total times for the first three elements, which have been figured to a bobbin basis. In some mills the cleaning is done after each doff of full packages or after every other doff. In other cases it is done at stated periods, such as once every 8-hour shift or twice each shift. Regardless of when done, the time for cleaning an operator's assignment of spindles can be easily determined by tests. For example, if cleaning is done every four hours and it takes the operator 10 minutes to clean off her job:

$$\frac{10 \times 100}{4 \times 60} = 3.1\ \%$$ of her total time for cleaning.

In some mills the practice is to have the packages fill up together on an operator's job so that all her spindles will doff at approximately the same time. In these cases the cleaning is done at the end of every doff or every other doff, and it is a simple matter to figure the percentage of time required for cleaning as against the total time between cleaning periods.

And this brings up a question which is often raised. Is it better to have the packages fill up together or to let them fill up at random and be doffed, and the spindles re-started, as they reach the full diameter? Generally speaking, the winding cost is lower where the packages are doffed individually as they reach full diameter. However, in some cases it is necessary that they be doffed in sets. For example, where a mill has a number of small orders to fill, each calling for only a few cases of special yarns, it simplifies the job to put the required number of operators on each order and tell them how many doffs to wind. This is figured out beforehand as to the number of doffs required to fill the order. In such a case, the time of "tailing-out an order" is saved, as it would take several hours for each operator to fill up all the packages on her job if the doffs are broken up. Also, in mills which spin a wide variety of yarns, calling for the counts being changed often on the winders, time is saved in tailing-out each operator's assignment of spindles by having the packages fill up together.

In those mills where the counts are not often changed, where each operator will run for days at a time on the same yarn, there is no question but that time is saved by doffing each package as it becomes full and then starting that spindle up immediately, without waiting for the balance of her spindles to fill up. This will mean that the operator's production will be higher, with a corresponding decrease in winding cost. The details of these methods will be covered in the next installment under a detailed analysis of an operator's job.

(To be continued.)

Plastics Add to Life of Army Tents

Army tents are now being improved to a degree undreamed of only a year ago through the application of plastics to the duck from which tentage is made, according to the War Department. The improved process was developed by the Quartermaster Corps which procures duck for all branches of the Government as well as for various arms and services of the War Department. The development of the improved process came as a result of the co-operation of the textile finishing industry and leading plastic manufacturers with technical personnel of the Quartermaster Corps.

The procedure involves the application of a plastic composed of esterified rosin combined with phenol formaldehyde resins to ordinary duck material as a part of the fire-resistant, weather-resistant and mildew-resistant compounds previously applied. The plastics component of the compound greatly increases the life of the duck material, improves its water permeability and protects the fire-resistant finish against weathering or deterioration in storage. The compound, fortified by the plastic addition, may be applied with a pad or spread with a knife and dried either over cans or by festooning, as is now practiced. The new plastic formula is low in cost, being made primarily by the use of rosin obtainable in large quantities from pine trees, and also affords a saving by acting as an extender in the use of phenol formaldehyde resins.

Somewhat more than a year and a half ago the Quartermaster Corps technicians began an intensive study of ways and means of improving Army tentage and succeeded in obtaining various finishes that would give the maximum water, weather, fire and mildew resistance to heavy tentage. At the beginning of the study chlorinated rubber was the only film-forming material used to enhance these qualities. A number of other plastic materials were utilized from time to time such as ethyl cellulose, vinyl resins such as is utilized in Koroseal. The new plastic completely displaces chlorinated rubber and provides an improved finish over the formulas where chlorinated rubber is used, thereby releasing that strategic and critical material for other uses in the war effort while at the same time providing longer life and better water repellency to Army tentage, which includes tents, tarpaulins, and truck covers.

Water Repellent and Waterproof Finishes for Textiles (*Article 2*)

By Eric Croen

THIS is the second part of a two-part article. The first installment, on page 63 of the December issue, discussed various methods of making fabrics waterproof, water-repellent and water-resistant, primarily with the use of water as a method of application. The present installment discusses water-repellents that make use of organic solvents as the medium of application; resins in waterproofing and water-repellent treatments; water-repellent finishes that are also mildewproof; and the subject of accurate terms and testing methods.

This will be followed by a similar article discussing treatments for mildewproofing, and one on fireproofing treatments . . . . . .

RECENTLY, several companies have introduced water-repellents that make use of organic solvents as the medium of application instead of water. The solution can be used on all textiles, but is especially desirable for garments where the danger of distortion or shrinkage is much reduced. Solvent solutions also penetrate better than those of water, and better fixing of the wax is accomplished, so that the results are more resistant to washing but not enough better to preclude re-treatment. Such solutions can be put on in the usual padders and mangles, but with solvents there is the ever-present hazard of fire, and of course they cost more than water. Therefore, the chief application will be in dry-cleaning establishments where the people and the apparatus are more adapted to this kind of work.

Referring again to specification PQD 115A, this time to Type II, the general requirements state that it must be a stable composition of wax and/or aluminum salts with a total of 40 per cent solids which must be completely soluble in the dry-cleaning solvent of the Stoddard type (this must not flash below 105 degrees F.). It must not be alkaline, a slight acidity is allowed; 2 per cent calculated as oleic acid. Dilution with the solvent must be practical in all proportions and it must not be affected by small amounts of moisture. It may be used immediately after the dry-cleaning operation, though it is preferable to dry before this final application.

For a performance test, the compound is reduced to a solution containing 4 per cent solids, the duck is immersed in this and then extracted so that 1 per cent solids are left on the dry weight of the goods. The hydrostatic pressure test should read 25 cm. and the spray test should rate 90 initially and 80 after 10 days' weather exposure, these figures being similar to those of the aqueous emulsion, or Type I. The Quartermaster specification OQMG24a also describes this solvent type. Directions have been worked out so that the compound is diluted 1:5 and the garments are worked in it for 3-4 minutes at 90 degrees F.; the goods are then extracted so that 15 pounds of the liquor are left in 100 pounds of clothes. This again figures a deposit of 1 per cent solids, mostly waxes. It is being used in the Army chiefly for hats, jackets, trousers, helmets, mackinaws and overcoats. Water-repellents in organic solvents will find increasing use in dry-cleaning establishments for the civilian trade with only a slight increased cost for this extra service.

Water-Repellents with Resin Binder

Another type of water-repellent consists of a solvent solution of waxes and softening agents with a curing resin binder. It is applied on the padder or mangle without any further addition or dilution. A retention of 50-70 per cent is recommended. The fabric is then dried and/or cured depending on the machinery available and the time factor involved. Thus, a higher temperature requires less exposure. At 280-290 degrees F., a curing for 1 to 2 minutes is effective while at 220 degrees F., 10 minutes will do the job. Tenter frames or loop dryers can reproduce such conditions. No further after-treatment is necessary. The textiles do not shrink and there is no danger of tendering. The effect is said to be fast to washing at a boil.

Further improvements in one-bath water repellents are constantly being made, of which only a few can be touched on here. Other metallic salts than the traditional aluminum are being tried with gratifying success. The all-inclusive word "resin" also enters the picture. Resins, when used as binders, give additional resistance to easy removal. The actual types employed are as yet the secrets of several companies using them on their specially-advertised water-repellent finishes. Because some of such resins make a single emulsion product impractical, two mixtures are sold separately with instructions to combine them just before using, adjusting the dilution and the pH to the proper degree. This is then padded on and dried, no curing is needed though an extra rinsing to remove the by-products must be made. It is a great improvement in fastness to washing over the wax-alumina type as it will stand several washings at 140 degrees F. and at least one at 160 degrees F. Though especially useful for jackets and raincoats, it is not approved by the U. S. Army as there is a better type available, but as an intermediate grade, it has its useful place in civilian life.

The Zelan Finish

The more durable type demanded in the Army specifications is of course Zelan A*, which at present ranks high in the water repellent

*A detailed description of applying "Zelan-A" was presented in an article, "'Zelan-A' in the Finishing Plant", by George A. Slowinske, of the fine chemicals division, technical laboratory, E. I. du Pont de Nemours & Co., Inc., on page 67 of the December 1941 issue of COTTON. Reprints of this article are available upon request.—THE EDITOR.

field. It was discovered after long research by English chemists and marketed in England by I. C. I. under the name of Velan PF. Introduced commercially both there and in this country about five years ago (see *American Dyestuff Reporter*, Nov. 30, 1939, pages 647-50), it has won a rightful place in our civilian use not only through intelligent advertising but because the manufacturer was careful to control the performance of the fabric so treated before allowing any goods to be sold with the certified label. This performance includes the fact that it will stand washing at a boil and withstand dry-cleaning (with the Stoddard solvent but *not* chlorinated solvents). The Army standards quoted here are given because they are similar to commercial performance tests. The durable water-repellent shows only a small amount of change in water resistance after the cleansing operations as compared to the original conditions, and these operations may be extended considerably beyond the number asked for in the test. Specification PQD 1 for wind-resistant cotton twill or poplin used for jackets and windbreakers calls for the following:

	Spray Rating	Hydrostatic Pressure
Initially	90	30-40 cm**
After 3 launderings*	80	20-30 cm**
After 3 dry-cleanings*	80	30-40 cm**

*See Federal specifications CCC-T-191a for methods of washing and dry-cleaning.
**Depending on type of fabric; two are specified in detail.

Vast yardages of this cloth and finish are being processed; of lesser quantity are PQD 38, a cotton twill (often with a rayon warp) made into parachutes, and Army Specification 6-621, a vat or pigment-dyed OD on herringbone twill, used for fatigue uniforms and coveralls.

This durable water-repellent is ordinarily spoken of as a long-chain quarternary compound, but so are many modern softeners which are not at all water-resisting. Actually it is octadecyloxymethpyridinium chloride whose chemical formula is $C_{18}H_{37}O.CH_2NC1.C_5H_5$ which can be broken into three groups to show their individual use. A stearic group which does the water-repelling extends out from the fibers where it is fixed at one end of the long chain of carbons in some unexplained way by the ammonium grouping. The pyridine part breaks away during the application, having served to carry the other two parts to the fabric. The application requires careful control, and the manufacturer's directions must be followed if results that will be approved are to be attained. Here we will briefly outline the four necessary steps:

Steps in Applying Zelan

After making the solution according to detailed instructions, it is padded on in such a way that about 6 per cent of the compound is actually put on the dry weight of the goods. The next step involves a quick drying at a low temperature by employing large volumes of air and effective exhaust fans. The temperature of this breeze may be as high as 200 degrees F., but the cloth itself must not get hot lest the compound decompose before the curing is effected. The curing is accomplished by exposure for 2-4 minutes at temperatures ranging from 290 to 310 degrees F. A final wash with alkali and a sulphonated alcohol on jigs or in a continuous washer is needed to remove the acid decomposition products; and these in turn must be thoroughly rinsed out as they would impair the water resistance if left in.

Unless these steps are properly carried out in every detail, tendering of goods may result, and the soft, durable water-repellent effect would not be realized.

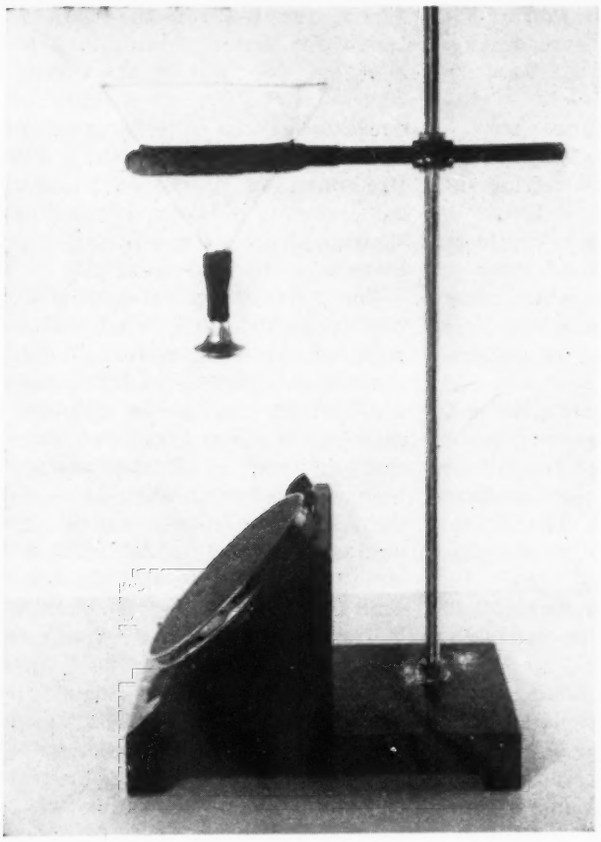
The excellence of this type of finish carries several limitations with it. It is an involved process requiring equipment beyond that of the ordinary textile finisher, and there is a liability of corrosion of metal parts which have to be especially selected. Also, the cost has kept it out of the hands of many finishing plants and from a much larger use by the public. Note that the chemical is put on in greater quantity than with the wax-alumina type, and it is considerably more expensive. But a point to be considered is that the durable type will stand exposure to weather for a much longer time than the wax-alumina type whose renewal may not be practical for a fighting force thousands of miles away from a laundry!

The durable type so far mentioned is really only one compound of a whole family of chemicals. New members are known while distant relatives are constantly being discovered. Dozens of patents both in this country and abroad are repeatedly suggesting others (see *Textile Colorist*, May 1942, pages 95-98). One is methylstearamide, which is applied from a solvent solution, then cured at 300 degrees F.; the results are said to be fast to laundering. Another company starts with this same chemical, combines it with thiourea, which builds a dry-cleaning resistance into the molecule.

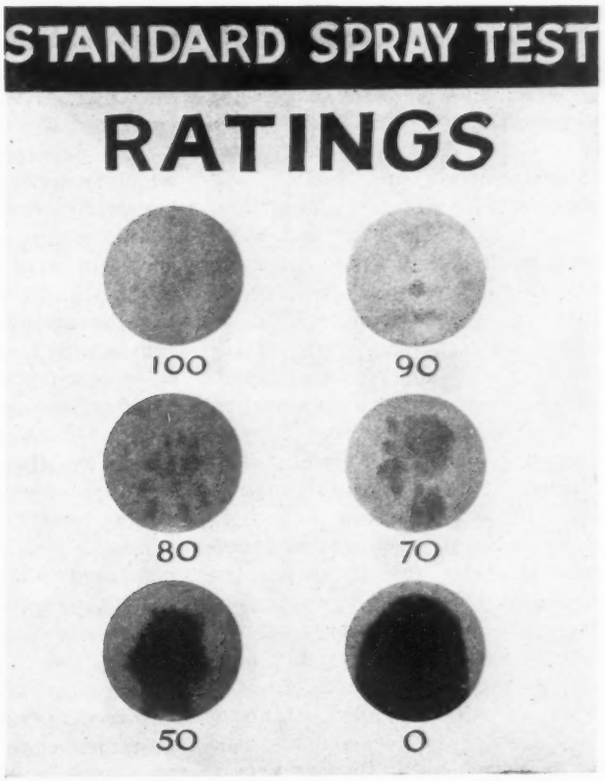
The chemistry of these is intricate, and far removed from aluminum soaps. We cite them as illustrations of a vast field opened just five short years ago. Research will make possible many useful and perhaps amazing results. The tendency just now is to get compounds that are easier to apply than Zelan while not detracting from the good qualities of that type. At least two other products in this field will have more work for the handmaidens: research and advertising. One such product that now finds acceptance for civilian use has a spray rating of 100-70-70 (initially and after three washings or dry-cleanings) as compared with the Army requirements of 90-80-80. There is a possibility that government specifications may be changed a little to include this type, but it has already found its place among water-resistant finishes.

Water-Repellent Finishes that are Also Mildewproof

Because of the idea that certain fats and waxes are liable to make fabrics more susceptible to mildewing, certain government specifications call for a water-repellent finish that is mildewproofed; and note that this means that the material put on must be so protected, and not the finished fabric as a whole. For instance, JQD 54A covering ducks and twills used for shelter tents reads, in part: the vat or mineral-dyed fabric shall be made highly water-repellent with sulphur-free alumina acetate, wax and soap. The use of wax solutions in solvent or aqueous emulsions will be acceptable. (The wax is usually 60 parts of paraffin with a melting point of 124-125 degrees F. and 40 parts of petrolatum, melting point



The spray tester



The spray testing rating chart. (Colored water used for photograph effect.)

148-150 degrees F.) The wax repellent *finish* shall contain no less than 1½ per cent by weight of copper stearate based on the solid content of the finishing material.

Since a great deal of difficulty has been experienced in combining copper stearate with some of the commonly-used wax emulsions, applications by the finishers for use of other non-odorous, non-toxic mildewproofing agents will be favorably considered.

There are a number of ready-made mildewproofed wax emulsions on the market and they are rather widely used. The light bluish color does not interfere very much with the dyed shade. One such is water emulsion containing 45 per cent active ingredients which is diluted at the rate of 7 gallons with 17 gallons of water. The duck is padded through, squeezed and dried to evaporate the water and melt the wax to give a uniform finish.

As alternates to the copper stearate, at least two have much to recommend them. One is salicylanilide, which may be used to the extent of 10 per cent on the dry weight of the water repellent (which figures about 3 per cent on the water-repellent solids) — see *American Dyestuff Reporter*, 1936, page 326. And the other is orthophenylphenol, of which small amounts are very effective.

Some Army specifications which call for this type of finish are JQD 54A (mentioned above); PQD 33A, a cotton twill for uniforms or overcoat linings; PQD 142, OD barracks bags; PQD 127 (previously touched on under straight water-repellency); and PQD 260, mosquito bars.

A more thorough discussion of mildewproofing will be given in the next article in this series; there we will again mention its combination with water-repellency.

Methods of Testing

We cannot leave the subject of water-resistant finishes without considering the development of methods of testing. In this, the American Association of Textile Chemists and Colorists have done much important work and clear thinking. It is interesting and instructive to read the committee reports as the years go by and note the shift in procedure for determining the resistance of fabrics to water. The writer feels, therefore, that he can do no better than to use this information as a background and to quote from some of the writings that have come out of this organization.

Going back several years to the time when the hydrostatic pressure test and the box test were practically the only apparatus known, we read that these were "believed to be reliable, duplicable and as representative as possible in actual use. Tests such as these, however, are deficient in that they give no information as to the ability of a fabric to retain its waterproofness when it is used repeatedly. Fabrics in service are exposed to deteriorating agencies such as sunlight, rain, crumpling, folding, and distortions by pulling and handling." A tentative procedure was worked out which included a standardized crumpling treatment and controlled exposure to light and to a water spray. (See "An Accelerated Ageing Test for Waterproofed Ducks and Similar Fabrics", *American Dyestuff Reporter*, February 13, 1933, page 114.) It is to be noted that a crumpling feature is re-

quired in Specification K-P-146 for tarpaulins, already mentioned in this article.

During the following years when water-repellents were being much more widely used, the necessity for accurate terms and testing was even much greater. The best thought on the matter was a report published in the *American Dyestuff Reporter* (January 6, 1941, p. 6-12) from which we quote: "Practically every textile finishing mill applies water-resistant processes, and as a consequence, is faced with the problem of measuring the quantity of its output of treated fabrics. Unfortunately, only limited progress has been made in the development of procedures suitable for measuring the resistance of textiles to water. The literature describes scores of procedures and instruments. But none are accepted as standards. In fact, most of the so-called standard tests are not the ones actually used by those engaged in the commercial application and exploitation of water-resistant textile finishes. Spotting tests, spray tests, running water tests, immersion tests, penetration tests and hydrostatic pressure tests all are being used today by the industry. Consequently confusion reigns. The whole problem is complicated by a lack of practical or acceptable definitions of the terms used to describe the properties of treated fabrics which the different tests are intended to measure. Everyone has at one time or another heard such seemingly unrelated terms as water-resistant, water-repellent, waterproof, stainproof, shower and rainproof."

When the problem is analyzed the requirements of modern textiles designed to resist the wetting action of water fall into three headings:

"1. Strong resistance to water under pressure.

"2. Moderate resistance to penetration by falling water, such as rain.

"3. Resistance to actual wetting by water.

"The various procedures used in the trade to measure these three properties of water-resistant finishes may likewise be placed in three groups as follows:

"1. Tests that measure the hydrostatic pressure required to cause breakdown of a fabric; and tests which measure leakage through a fabric under a *fixed* hydrostatic pressure, such as bag tests, box tests and funnel tests.

"2. Surface repellency tests which measure surface wetting and penetration under the influence of falling water, such as spray tests, dropping tests, and faucet tests.

"3. Absorption tests which measure the absorption of water by a fabric when immersed or manipulated under water."

After this classification, the last-mentioned reference goes on to describe the three simplified testers that are considered most suitable at the present time. The reader would do well to look at the data presented there, and read the AATCC yearbooks for descriptions and illustrations of the apparatus used.

Bringing this discussion back to government specifications and requirements, we find the box test often used in testing water-resistance. This is to be found in Federal Specification CCC-T-191a and also in the AATCC yearbook (1940, page 225). The hydrostatic pressure test used in PQD 115A is about the same as the one described in the AATCC yearbook for 1941, while the Suter apparatus is used in Army Specification 6-238A. Again, for K-P-146 the cloth is tested for water permeability by allowing the water at various depths for different weights of ducks to leak 10 cc in 10 minutes. Thus for Requirement No. 1 and Procedure No. 1, the government has several methods of testing showing as little standardization as there is in the trade generally.

For Army Specification 6-185C, webbing, a drop test is all that is required. The material shall only show slight wetting in three minutes—which grey goods, and even some poorly scoured materials, pass easily. The spray test has already been referred to in PQD 115A, in the AATCC yearbooks, and is also used for PQD 127. All of these state that the nozzle with the holes shall be 6 inches above the cloth to be tested. A much more severe test results when the height is increased up to 24 inches. Some fabrics pass well under the simulated rain at 6 inches but leave much to be desired at 24 inches. Several companies have adopted this variation because when passable under this more forceful impact, there is a good "bridge-of-safety".

(In the next issue of "Cotton", Mr. Croen will present a similar practical article discussing the mildew-proofing of textile fabrics, to be followed in a later issue by a discussion of methods of fireproofing fabrics.—The Editor.)

Identification Sticker for Durene Products

Durene Association of America, 122 East 42nd St., New York City, has issued a new identification sticker for use on men's, women's and children's underwear and outerwear. The new sticker, which was checked by the association with a cross-section of retailers, both department stores and chains, has been highly commended on the grounds that it can be easily memorized and repeated by sales people and also because it clearly states specific qualities of the yarn of interest to the consumer from the service standpoint.

Notable is the current increase in the use of "Durene" identification by manufacturers and retailers in the face of decreasing availability of Durene yarn for civilian goods. In response to demand from hosiery manufacturers, a field in which the use of Durene yarn has greatly increased both for military and civilian use, rider tickets stating the characteristics of Durene mercerized cotton important to comfort and wear will shortly be made available by the association.

A new sales training manual, "How to Sell More Merchandise Made of Durene Multi-ply Mercerized Cotton Yarn" has been released to merchandise and advertising managers, sales training directors, buyers and clerks of stores throughout the country. These manuals have also been made available to mills and wholesalers. Four outstanding advantages of Durene yarn are clearly defined, with the present urgent demand for simplified sales training in mind.

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"Victory Program for Linen Closets"

The Manufacturing Division of Marshall Field & Co., 82 Worth Street, New York City, has issued an attractive and useful placard "Victory Program for Linen Closets", especially printed with store names and appearing as their gift to their customers. The placard contains a "Linen Closet Check List" on which the user can keep a record of the various domestics being used, and carries also a number of illustrated suggestions on increasing the life of linens.

Co-operative Goodwill

By W. M. McLaurine

Secretary-Treasurer, American Cotton Manufacturers Association

IN THE FIRST of the two previous articles of this series, page 66, November COTTON, we discussed "Some Facts to Consider" outlining certain well-defined groups that exist in our society and how they are in conflict with each other, preventing that social progress which we all desire so much.

In the second article, page 70, December issue, we discussed the subject, "Why Must There Be Groups?", outlining some of the salient and specific factors that cause people to break up into groups. In short, we were of the opinion that our different interests and philosophies develop mental distances that cause group segregation.

Since the cause for group or class segregation must be removed before there can be unity, some attention must be paid to the causes, hence in this article, we shall endeavor to point out at least one alleviating factor that can be applied with beneficial results, that of co-operative goodwill.

The expression "co-operative goodwill" lifts the discussion immediately away from the emphasis on material things and places it on mind. It goes back of the act and deals with the motivation of the act: Is it good or bad? Dr. Harry Emerson Fosdick has said, "The only redeeming and enduring victories that mankind has ever achieved lie in the realm where His spirit has moved human effort over from the coercive ill will to co-operative goodwill." Such is the formula for changing coercion to co-operation—this factor properly applied is the formula for bridging or destroying distances.

This expression "co-operative goodwill" may seem redundant as co-operation implies goodwill and vice-versa, however, to make it emphatic and foolproof we have used the combination.

As usual, goodwill has its roots grounded in industrial relations and industrial relations are nurtured and made strong by the application of human relations. Human relations are motivated by feelings and emotions. For want of a better expression, we call them reactions of the heart.

In order to develop human relations of the highest type, it is necessary for the leader to have the widest knowledge of things possible. He must know machines and their operations, materials and their uses, production and its intricate requirements, the strains and stresses of work loads, the value of rest and recreation, something about the body and its eccentric reactions, physiology, psychology and too much more to mention.

In the second place, he must have more than encyclopedic knowledge. He must have a judicial head or mind which will enable him to make plans and demands that are fair and tolerant. He must be convincingly dominant in his thinking and judgment. His head and his heart must work together; either one by itself is not enough. It takes the co-operation of both to produce co-operative goodwill.

THIS IS the third in a new series in "Cotton" by Mr. McLaurine. The first appeared in the November issue, and the second in the December issue. Previously, we had presented 12 articles by him directed mainly to plant executives and supervision, as to various phases of public and industrial relations.

The present series is intended to provide, for the operating executive, information which it is hoped will be useful for transmitting to the employees of the plant . . . . . .

Wherever people work together, there are heads and hearts developing some kind of human relations. Their capacities are all different and what is fair must finally seem fair to all. Hence the supervisor and management must always be alert.

A labor leader is reported to have said recently, in an address on industrial relations: "A stupid foreman or an indifferent manager is the best possible labor agitator. I have never been able to organize a thoroughly well-managed plant." This statement is a challenge to the foreman and manager for an awakening and a survey as to whether or not in their plant there is that co-operative goodwill that repels labor agitators.

All people are gregarious and must associate with those whose thinking promotes some kind of goodwill. If it cannot exist between management and labor it will develop between labor and labor leaders, politicians or other extraneous factors. People must follow a leader and if management cannot effect conditions for leadership, it will be focused elsewhere.

There are no unbridgable distances between management and labor. There are very few obstacles, in many instances, which prevent complete co-operation. Management too often has assumed conditions and reactions that do not exist. Labor has too often misinterpreted the attitudes and desires of management. Too many managers of industry think that human relations mean "coddling and petting". It means no such thing. It is simply common sense applied to the human factor.

The politician and the salesman know what mass psychology means. They know the art of convincing salesmanship and the result of satisfied customers. Business must have a bill of "human relations" that is of value and then studiously and industriously sell it to its people. All people respond to the humanities. Management must take a human as well as a material interest in their workers. They must see to it that they are taught straight thinking.

America is not lost, as is evidenced by the Gallup Poll. The cross-section of their surveys shows that the average American, among

whom is our worker, is, on an average, safe in his thinking.

Before Lend-Lease, he voted 9 to 1 in its favor. He voted long before Congress for the repeal of the Neutrality Act.

He voted in October, 1941, 77 per cent against closed shop. He voted against labor racketeering. He voted 86 per cent against strikes in defense industries. He has voted for a 48-hour week, and so the story goes on and on.

The average American, among whom is our worker, thinks and is capable of appreciating our efforts to build co-operative goodwill. Those who employ him must cultivate him carefully and intelligently and the ills of this country can be cured yet, or at least greatly alleviated.

Our workers are ready to assume their part in making the program of co-operative goodwill a reality whenever management is ready. It will be no overnight or quick accomplishment. It can be done and will break down the distances which make groups.

AN OVERSEER'S BULLETIN ON

Cost and Related Factors

W. M. Kirby, overseer of spinning, Abbeville (S. C.) Mills has made available to us a copy of a bulletin he prepared and distributed among the key men in his spinning department with respect to cost and related factors. We believe the idea of issuing bulletins of this nature to the key men in a department is an excellent one, and also that the information in this bulletin will be of interest and value to other readers of COTTON. *Accordingly, we secured Mr. Kirby's consent to publish it, and it appears in full below:*

Cost and Related Factors

"For some time I have been studying how to approach you for the best method of keeping our cost in line. I would like to arouse in you a keen sense of responsibility in regard to this. For the past year our cost per pound has risen steadily, and of course this is due in part to the wage increase given the employees by the management. However, in many cases our costs have risen from causes not related to wages.

"In times such as we are now facing we are prone not to watch cost as we should. Because the management is liberal in this respect does not eliminate our responsibility but instead we should try harder to justify their liberality.

"Here are some of the things we should do to help our department along the lines of cost:

"No. 1. We are faced with the problem of using semi-skilled help. This help needs instruction and more instruction. These instructions should be carefully given, in a manner that is understandable and helpful. We should make these employees understand that we are interested in them and also make them feel that they too are a cog in the wheel and their work is important in making a fabric that some buyer will be anxious to buy.

"No. 2. We are taking on learners from time to time. They are brought in here from the country, our village, and our town. They are timid and afraid unless they are made to feel that we are interested in them. They must be taught, and in this teaching we must make it as elementary and simple as possible—we cannot expect a learner to grasp everything told him at once, hence we must tell him over and over. We must explain the best method of doing the job. We must in many cases show him ourselves how it is done. We must be very patient and we must not forget him after a few days—*this is important.*

"No. 3. We are all human and even though we might consider ourselves efficient, we sometimes get careless, and this same condition occurs with the employees under our supervision. Regardless of how good a doffer may be, sometimes, unless talked to about his work, he too is going to get in a rut. Hence our responsibility is to talk over the bad work problems with our help and if this is done the problem of carelessness will be lessened.

"No. 4. Supplies play a prominent part in the expense of any department. A supply part costs money and every one used carelessly means that you have wasted money that you could have saved if you had been more mindful of your responsibility. It is true that parts must be replaced, but if these parts were put on machines efficiently and oiled efficiently the cost per spindle in supplies would be much less than it is now. You are not supposed to oil yourselves, but you are responsible to see that it is done.

"No. 5. Our system of cost is based on units, and when we have a few frames stopped, it means our cost is higher. Every employee is figured in this cost and if we keep a full force of help when 12 frames are standing 8 hours we are losing quite a sum. Every corner that we can cut when these conditions exist should be put into action and you can help greatly in this if you will follow it through and help your second hands with this problem.

"I have tried to outline to you important matters and I hope you will endeavor in every way to follow these through and there are many more that confront you every day which I have not mentioned but which are also important.

"As I have told each of you before, we welcome your ideas and advice and assure you that every consideration will be given to any idea from you that will be beneficial to our plant and department.

W. M. KIRBY,
Overseer of Spinning."

Supplies Saved Today Prevent Serious Shortages Later

By Ernest W. Fair

TODAY it is not only good business but a patriotic duty to save materials and economize on their use. Many materials, supplies and ingredients in use in the modern mill are today vital to our war effort, and must be conserved.

As if these facts were not important enough we have another additional point in that this is wise management; with every executive's production costs mounting almost daily, there is no longer any excuse for waste or carelessness.

Here are a number of conservation methods being employed by several mills in their present operation; each and every one of which merits serious consideration by every reader of these pages. All will save against that possible shortage tomorrow, all will help keep production costs down, all will contribute to the success of the war effort.

Watch Measurement. This means a closer check on measuring for accuracy and to make sure only the right amount is used on each occasion. Measures to prevent wastage during such operations are also advisable.

Check Storage Facilities. Often supplies are lost through improper storage. Accidents which cause containers to become upset and their contents to be spilled are most frequent in the average mill. Spoilage or deterioration may also occur through improper storage. It is also advisable to check the storage spaces or rooms every month or so to make sure they are clean and weather proof and to check electric wiring therein in order to safeguard against possible fires.

Avoid Transportation Waste. A can of oil full to the brim will "slop over" and lose a valuable part of its contents; one three-fourths full will not do this when being carried or transported from the store room to the point of use. This same fact applies in good measure to the transport of other supplies and materials and if an effort is made to curtail waste here the results will prove it to be well worth while.

Mistakes Mean Supply Waste. Mistakes should be religiously condemned and in some instances punished for some of the most costly waste in the average mill can be charged to errors of judgment in preparation of materials or supplies. It is as serious to waste these supplies in this manner as if they were poured down the sewer.

Conserve Electricity. Electricity is becoming one of the most essential of our war supplies; its waste by anyone is inexcusable and unnecessarily expensive. Machines should not be left running when their task has been completed, signs should burn only when needed and electric lights should be turned off immediately following their use.

Shorter Lengths and Narrower Widths is a good doctrine to apply in the handling of many types of supplies and materials. Here is a point where most of us have a tendency to be wasteful; one at which nearly every mill in the land can find a measure of conservation by more rigid control.

"Don't Use More Than Necessary", is a good sign to post all over the mill. Make sure that every employee thoroughly understands how a "little bit more" than is actually needed of any supply means just that much waste. And those "little bits" don't take long to add up to an "awful lot".

All of these points are of importance. Many others will occur to every mill executive from time to time for wise executives will, in future weeks, be constantly seeking out methods by which they can save supplies and materials and make them last longer.

However, it is highly important that the part the employee plays in this campaign is not overlooked. The effort of the executive himself will be pitifully small if he cannot secure the same watchfulness on the part of each and every employee in the mill. Every employee of every textile mill in the country today must be made to realize: "The supplies we save now may prevent shortages later!"

Report on Arbitration

Increased use of arbitration facilities to settle trade disputes was reported to the semi-annual meeting of the General Arbitration Council of the Textile Industry by its secretary-treasurer, Paul B. Halstead. The Council in the first eleven months of 1942 handled 65 cases as against 45 cases in all of 1941. Arbitration proceedings were carried through on 29 cases; 36 were settled by mutual agreement after arrangements for arbitration had started; 27 awards were made, all but two being unanimous.

The Council derives its authority from clauses in the salesnotes of various branches of the cotton industry which provide for arbitration under the rules of the Council of any dispute arising from the contract. In all the cases heard there were three arbitrators, one appointed by each of the parties, and a third selected by these appointees. Seventy-one persons connected with firms of selling agents, converters, finishers, garment manufacturers or brokers accepted service as arbitrators during 1942.

The Council emphasized the fact that it does not, within its own membership, arbitrate disputes. Its function is to provide rules of procedure and facilities for the orderly conduct of arbitration. Seventeen per cent of the cases heard in 1942 were instituted by selling agents; 33 per cent by converters, and 29 per cent by cutters-up.

Claudius T. Murchison, president of the Cotton-Textile Institute, Inc., is chairman of the Council. The following associations are constituent members: American Cotton Manufacturers Association, Association of Cotton Textile Merchants of New York, Association of Cotton Yarn Distributors, Carded Yarn Group, Cotton-Textile Institute, Inc., Cotton Thread Institute, International Association of Garment Manufacturers, National Association of Cotton Manufacturers, National Association of Finishers of Textile Fabrics, National Association of House Dress Manufacturers, National Association of Purchasing Agents, Inc., Southern Combed Yarn Spinners Association, Textile Brokers Association, Textile Fabrics Association, and Wholesale Dry Goods Institute, Inc.

Alabama Men Discuss Carding and Spinning in "Meeting by Mail"

THIS IS AN unusual sort of report, but the circumstances producing it were likewise unusual. The Alabama Textile Operating Executives, composed of the superintendents and department heads of the spinning and weaving mills of Alabama, normally hold, in January, a round-table discussion meeting on subjects relating to carding and spinning. Due to the conditions induced by the war, especially the necessity of conserving on transportation in the interest of the war effort, the executive committee called off the meeting scheduled for this month. However, wishing to retain contact with the members, and keep their interest alive, the committee adopted the unique procedure of submitting by mail the questionnaire that would have been discussed at the meeting, requesting written replies to the questions. COTTON gladly acceded to the request of the committee to publish these questions, along with the answers received, and this material is presented herewith. It will be supplied in reprint form to the membership of the organization as proceedings "by proxy" as it were, and we feel the practical information included will be of interest to other readers of COTTON interested in these departments.

There were in the questionnaire six questions on carding and six on spinning. There were 15 mills participating in the answers. Not all of them answered each and every question. and so for identification, we have retained the same mill number for each mill throughout, in reporting the answers.

The first question on carding was, *"Can a uniform weight flat strip be obtained from all cards when uniform settings are employed, or is it necessary to use different settings on different cards? (This question refers to cards of the same manufacture and not to cards to different makes.) What flat speeds and weight of strips per flat are best for a mill with an average number of 13s?"*

Uniform Card Flat Strips?

Mill No. 1: All cards cannot be set alike to obtain uniform strips. We recommend taking out 180 grains of strips per 10 flats. Then speed up or slow down the flats according to the percentage of waste desired. Different cards will require slightly different plate settings to accomplish this.

Mill No. 2: No. The mechanical condition of the cards as well as wear and condition of the clothing would prevent making the same weight flat strip. We have found 3⅓ inches per minute to be the best flat speed with a weight of 15 grains per flat on an average number of 13s.

Mill No. 4: We have never been able to obtain a uniform weight flat strip using a uniform setting, but would not vary the setting to get a uniform strip. These variations in flat strips may be caused by new clothing on cylinders or flats, which will produce more strips than old clothing. Too, the air current will vary from one card to another, though the setting may be the same. We prefer a flat speed of not more than 4 inches per minute with 18 grains per flat on 1-inch Middling cotton for making 13s yarn.

Card Production—Doffer Grinding Speed

The second carding question: *"How many pounds should be run through a card before it should be ground on 7/8-inch or 1-inch Middling cotton? Should you grind with slow or fast doffer speeds?"*

Mill No. 1: We would recommend not over 168 hours between grindings for best quality work. Carding 16 pounds per hour, this would be 2,688 pounds. We grind with a slow doffer speed. The doffer runs at this speed, the bearings are built for this speed, and we have not found that high doffer grinding speed is advantageous. We grind the doffers every time we grind the cylinders and flats.

Mill No. 2: We grind our cards every 20 days on 8 hours per day run, or after each 160 hours of operation. We run ⅞-inch Middling cotton, carding 11+ pounds per hour, which approximates 1,800 pounds for each grinding. We grind our doffers at fast speed. We grind our doffers every time the cylinder is ground, but very lightly.

Mill No. 8: While some carders would recommend grinding more often, we find that we get very good results by grinding every 4,000 pounds on 1-inch Middling cotton. On ⅞-inch cotton it would probably be better to grind after every 3,500 pounds. We grind with the fast doffer speed and get good results. We have never used slow doffer speed for grinding.

Mill No. 9: We are running from 4,500 to 5,000 pounds through our cards before grinding on 15/16- to 1-inch Middling cotton. This has proved to be very satisfactory. We have never had any experience grinding on slow doffer speeds.

Results with Higher Card Speed

The third carding question: *"In changing from 165 to 195 r.p.m. of the cylinder, what outstanding changes should be made in the setting of the card? What is the increase in pounds carded? How does quality and strength compare on the conventional 165 r.p.m. to the higher speed of 195 r.p.m.?"*

Mill No. 1: We have not experimented with higher card speeds.

Mill No. 3: We made no changes in the settings of our cards when increasing the cylinder from 165 to 195 r.p.m. (We believe an increase in cylinder speed does require some changes in the settings on certain makes of cards). The increase in pounds carded is approximately 1 pound per hour. However, we cut our production gear so as to give the same pounds as before speeding up. The higher cylinder speed gave a higher breaking strength. The fly under the card increased.

Mill No. 5: We think it possible to increase the cylinder speed to 195 r.p.m. without making any changes in the settings, but we do take into consideration the condition of the cards, such as worn cylinder bearings, old clothing and vibration from the floor. Under certain conditions, such as when close settings have been used, we set the flats a little further away than the usual setting, gradually working down to the regular setting, and also backing off the licker-in from the cylinder. The increase in production at the high-

er speed would be the percentage of increase in relation to the percentage of increase in the speed of the cylinder, provided no other changes were made. We find the breaking strength remains about the same at the higher speed. The horsepower consumption is increased.

Mill No. 6: There should be no outstanding changes in the card settings unless you are spinning fine yarns which require close and more precise settings. Changing the settings either increases or decreases waste, which in turn changes the appearance of the goods. If the waste is increased we think there is a little sacrifice in breaking strength. According to our experience, the increase in production at the higher speed would be approximately four pounds per hour. Quality and strength, at the higher speed, should be equal to that of the lower speed. A cylinder speed of 195 r.p.m. will decrease the life of the card, at least by the amount of the increased production; it will also require additional grinding in proportion to the increase in speed.

Mill No. 7: In our experimenting with increased card cylinder speed, we have not made any change in the settings. Everything, including production, was increased in proportion. The strength and quality on the higher speed compares favorably to the strength and quality on the conventional 165 r.p.m. speed. In fact, we can see no difference in the yarns on a blackboard. We do find that the maintenance cost is higher with the higher speed.

Light Versus Heavy Carding

Carding question No. 4: *"Which will give the best results: a light lap fed to a card or a heavy lap, that is, 14 or 18-ounce lap, making a 66- to 68-grain sliver? Would you increase the speed of the licker-in?"*

Mill No. 1: Generally speaking, heavier laps produce a more even card sliver. We would not increase the speed of the licker-in unless the cylinder was speeded also, because the surface speed of the cylinder must remain high enough in proportion to take stock from the licker-in.

Mill No. 2: It has been our experience that a light lap gives the better results. We would increase the speed of the licker-in for a light lap and decrease it for a heavy lap.

Mill No. 3: Making a 66- to 68-grain sliver, we believe we would get better results with the 18-ounce lap. The licker-in speed would not be increased.

Mill No. 10: A light lap fed to a card will give the best results. You will have less chance of plucking and less chance of nose cakes. You can set the top flats closer and get a much better web. We increase the speed of the licker-in and set the feed plates farther away from the licker-in than the usual setting.

Mill No. 15: We get best results from feeding a heavier lap. This gives the licker-in more time to comb the cotton before it is delivered to the cylinder. If you run a heavier lap you will have to slow down the feed roll. We do not increase the licker-in speed.

Opener Machine Speeds

Carding question No. 5: *"What is the best speed to run a vertical opener and a Centrif-Air machine? Give pounds per hour run, on flat cotton and compressed cotton."*

Mill No. 1: The speed of the vertical opener, the settings and air draft must be regulated to the individual mill's local problem. First determine how much waste extraction is desired and then find the correct set-up for that. Higher air velocities, closer beater settings and slow beater speeds produce less waste, and vice versa. Our vertical opener runs about 650 r.p.m. We average about 900 pounds per hour on either flat or compressed cotton.

Mill No. 2: Our vertical opener runs at 650 r.p.m. We run approximately 1,000 pounds per hour of compressed and flat cotton mixed.

Mill No. 5: We take into consideration the grade and staple length of the cotton and the pounds of production per hour. Thus, we believe the vertical opener speeds should range between 550 and 800 r.p.m.; never over 800 r.p.m. The speed of the Centrif-Air machine should range between 450 and 600 r.p.m. The pounds per hour run would be governed by the pounds of production necessary to put through. The production could be greater on flat cotton than on compressed cotton.

Mill No. 11: We find that the speed of the vertical opener is governed to a great extent by the type and staple of cotton run. On 1-inch Middling cotton we run the vertical opener 650 r.p.m. We do not have a Centrif-Air machine. We run 1,400 pounds per hour on either flat or compressed cotton.

Percentage of Re-workable Waste

Carding question No. 6: *"What per cent re-workable waste is considered fair in the card room? (Carding and drawing—state number of processes of drawing.)*

Mill No. 1: Five per cent on 1-process drawing.

Mill No. 2: From cards through two processes of drawing up to the bobbin on the slubber: approximately 3 per cent re-workable waste.

Mill No. 3: Fair re-workable waste on carding, 4.5 per cent. Fair re-workable waste on 2-process drawing, 1.75 per cent. Total, 6.25 per cent.

Mill No. 12: Our re-workable waste runs around 3.6 per cent from cards and drawing, using 1-inch Middling cotton. We are making a 13-ounce lap and 48-grain sliver. We strip every 2½ hours with air strippers. Our card waste comes chiefly from fish-tailing laps, rough lap ends, ends down and waste from putting up the web after stripping. We insist that every man make the least amount of waste possible. We have two processes of drawing, and creel as the cans run out. We do not piece up any cans, therefore our waste here is very little.

Cleaning and Inspecting Spinning Rolls

The first question on spinning read, *"How often should steel rollers be scrubbed? How often should leather aprons be inspected and cleaned to get the best results when a 3-shift operating schedule is being maintained? What is the life of the top and bottom leather apron?"*

Mill No. 1: We scrub our steel rollers every six months on three-shift operation running 13s yarn from 15/16-inch Middling cotton. Aprons should be inspected and cleaned, and the worn or cracked aprons replaced, at the same time steel rolls are being scrubbed. We have no figures on the life of top and bottom aprons as we do not have that type of drafting system.

Mill No. 2: We scrub steel rolls one time per shift per year, running 15/16-inch Middling cotton. On three-shift operation, leather aprons should be inspected and cleaned one time per year per shift when overhauling.

Mill No. 3: We scrub our steel rollers and inspect and clean our leather aprons, every six months, operating 144 hours per week (3,944 hours). We find the life of the top and bottom leather aprons to be approximately one year operating 144 hours per week (7,488 hours).

Mill No. 6: Steel rollers should be cleaned about every 1,500 running hours under present operating conditions and with the tremendous amount of unskilled labor being employed. Some makes of long draft do not require as much cleaning as others. We try to clean ours at least every 3,000 to 3,500 running hours. We inspect and replace all worn aprons when we clean the steel rollers. The life of spinning aprons depends on several things, such as the grade of cotton, yarn numbers and class of help. We figure the average life of our aprons to be 18 months.

Mill No. 10: We scrub steel rollers

every 4 to 6 months, according to pounds. Aprons should be inspected every week and cleaned thoroughly on the under side every 4 to 6 months. On 2.50s yarn, with a front roll speed of 244 r.p.m., 9 to 12 months is a fair life for bottom aprons, with plenty of weight on the top rolls. For 12½s filling, front roll speed 172 r.p.m., 2 years would be fair. These figures of course mean keeping the aprons inspected and running in the proper track.

Mill No. 12: Steel rollers and stands should be cleaned and scrubbed at least once a year, and, if possible, every six months. Aprons should be inspected every week and cleaned at the same time by using special long draft cleaning brushes. When the rollers are scrubbed the aprons should be inspected thoroughly and the bad ones replaced. If the top rollers are in good condition and the steel rollers are kept clean, the average life of aprons on coarse yarn should be 4½ years.

Mill No. 15: We scrub our steel rollers every 2,568 working hours. We find our aprons last for about 24 months.

Curved Web Spinning Rings

The second spinning question: "*What results have been obtained with curved web rings in regard to traveler life, ends down, and life of ring?*"

Mill No. 1: Curved web rings allow the traveler to assume more nearly its normal position on the ring without back-tracking. The ring will probably last longer than the straight web for that reason. Traveler life is no longer on the curved web ring. Travelers are changed every 96 hours just as we did on the straight web rings. We have no comparative tests as to ends down between the curved web and straight web rings. All of our remaining straight web rings are worn and run badly. Due to the fact that the traveler does not back-track, we expect a longer life from the curved web.

Mill No. 11: We regret that we have no test figures comparing the straight web and curved web rings. While we have been running some of the curved web rings for several years, we have only recently begun using them in quantity. We have noticed no great difference in traveler life, ends down or ring life, but we do believe the curved web to be slightly superior in all three instances.

Keeping the Spinning Clean

The third spinning question: "*Which is the best method of keeping a spinning frame clean? Do you blow the frames off while in operation? How often do you clean the underside of the spinning frame? Give number of yarn spun, staple and grade of cotton. Do you use oil spray on the cotton? Also state results with and without overhead cleaning.*"

Mill No. 1: One method of cleaning frames is to stop the frame and blow it off every 24 hours. Another method is to blow the ring rails, base rails, etc., every four hours with the frame running, and then stop the frame once or twice a week for a thorough blowing-off. On two-shift operation blowing-off on the third shift works nicely. We make 13s yarn, 15/16-inch Middling cotton. We do not use oil. The overhead cleaner keeps the creels cleaner than frames without them. However, spinners should still wipe the creels periodically, as "tags" form in the creel and are finally blown into the ends.

Mill No. 2: We have tried cleaning the frame when in operation. We also tried cleaning and blowing off after the second shift on Saturday night since we do not run a third shift on Saturday. At present we are cleaning on Sunday. As yet we have not found a method which would keep the spinning clean.

Mill No. 3: We blow off while the frame is in operation once every 8 hours. We clean out the underside once a month. Our average number is 12s, 50 per cent ⅞-inch and 50 per cent 15/16-inch Middling cotton. We do use oil. We do not use overhead cleaners.

Mill No. 13: The desired quality of the yarn should be taken into consideration when setting up a cleaning system. We like the following method: Blow frame off once a week. Pick weights and idlers once a week. Pick rollers every other day. Keep fronts of stands cleaned. Pick stands once a week. Keep front sides run out. Pick top clearers every day, underclearers every other day. Have rocker and under frames mopped off every day. If you clean off with air, it would be better to stop the frames. After blowing-off, pick the loose lint off as much as possible. This prevents a great amount of slubs. All underneath work should be cleaned off twice a week while running three shifts. We run from 3s to 16s yarn and use 15/16-inch Middling cotton. We believe that oil spray and overhead cleaners are the spinner's best friends.

Doffing Frames Running Several Counts

Spinning question No. 4: "*To get maximum efficiency, what is the best method of doffing warp and filling frames where several counts of yarn are on one doffing job? What is the best method of paying spinners and doffers to get maximum production?*"

Mill No. 1: On filling, the frames must be run full. On warp, one can choose between a stopped frame and a short doff. Sometimes it may be best to give the doffers other duties, such as laying-up roving, so that they are more often available when the frames do fill up. For maximum production, a fair piece rate of paying spinners and doffers is always preferred.

Mill No. 2: No answer as to doffing method. We pay by the hank.

Mill No. 3: We group our yarn so that only one job will have different counts. On this mixed job we place the most experienced and best doffers we have. These frames are spot-doffed. We pay spinners and doffers by the hank clock reading.

Mill No. 5: No one would want to short-doff a filling frame regardless of the different counts being run on one doffing job. These frames should be doffed as they become full. Warp frames should as nearly as possible be doffed in rotation and when the bobbins are full. However, there are times when it is necessary to doff a frame short to keep it in line. This has to be more or less worked out on each individual job. It is almost impossible to use the same system on all jobs. We find paying spinners and doffers by the hank clock reading increases production a good percentage over paying by the hour.

Experiences with Women Doffers

Spinning question No. 5: "*With what success are women being used to replace men on doffing assignments? Is it better to transfer experienced spinners to these duties or to hire inexperienced girls for these specific jobs? Should they work with the boys or should they work on separate jobs?*"

Mill No. 1: Women are being used to replace men on doffing with only fair success. So far they have not shown up as well as men. An experienced spinner will learn to doff much quicker than an inexperienced girl. We would suggest pairing off doffers of equal speed, whether boys or girls.

Mill No. 2: We have several women doing a good job of doffing. We believe it better to transfer experienced spinners to doffing rather than hire inexperienced girls for these jobs. Girls should be able to work right with the boys.

Mill No. 3: The female doffers we have tried are about 80 per cent efficient when compared with a man of equal experience. We prefer transferring experienced spinners to these jobs. We have better results working the boys and girls together on the same job, provided they are of about equal speed.

Mill No. 7: Training women to replace men doffers has been very slow with us. To date we have trained several girls who we believe will make

very good doffers. They have had about six months' training and can run about 85 per cent of a job efficiently. These girls started with no mill experience and were taught by the men doffers until they could run 50 per cent of a job. Then two 50 per cent girl doffers were put on a full job.

Experiences with Synthetic Roll Cots

Spinning question No. 6: *"State experience, if any, with new synthetic cots in card room and spinning room, especially referring to eyebrowing. State whether or not they become distorted and the effect of humidity, giving what you consider the desired humidity. What is the length of time between buffings? Is special buffing equipment needed? Please state your yarn numbers."*

Mill No. 1: Synthetic cots will eyebrow on the front side of the clearer. We have not found that humidity or temperature affects their performance. Average spinning room humidities vary from 65 to 50 per cent depending on the class of work run, the weather conditions, the type of humidity used and the height of the humidifiers from the machines. Synthetic cots may be run for several years without buffing, but we would advise giving them a skin-deep buffing once a year, for, although they may look perfectly good, the buffing machine will show that they have packed in the center after prolonged operation. No special buffing equipment is needed. Our yarn numbers on synthetic rolls run from 2s to 10s.

Mill No. 2: Not enough experience to answer. We do have a few synthetic cots on drawing but have not run them long enough to tell much about them. So far we like them very much.

Mill No. 3: We have been running synthetic cots in the spinning for about two years. We eliminated eyebrowing by changing to revolving top clearers. The humidity and temperature has no effect on the rolls. We run about 55 per cent. We buff as lightly as possible once per year and require no special buffing equipment for these new synthetic rolls. Our yarn counts are 7s to 13.5s.

Mill No. 4: We have been running synthetic rolls on spinning for the past three years, and in the card room for the past six months. Eyebrowing was bad in both places. In the card room, we found it necessary to put the rolls on the back two lines (Super-Draft). Eyebrowing was eliminated in the spinning room by installing revolving top clearers. Synthetic rolls are used only on the front line in the spinning room. We found that it was necessary to keep the humidity more uniform on synthetic rolls than on other types and that 58 per cent relative humidity in the card room and 63 per cent in the spinning room gives the best results. Our spinning rolls have been in operation for over three years and as yet we have not had to buff any of them. The card room rolls have been running 6 months and have not been buffed. A special grind rock is needed for buffing synthetic rolls; this rock must have a smooth face at all times. Our yarn numbers are 23s to 48s.

Mill No. 5: We have had experience with all types of synthetic cots in both spinning and carding. One of the chief objections to these cots in the card room is the eyebrowing, but when placed in the back lines they work very satisfactorily. They also work fine on the two back lines in the spinning, but when placed on the front, we have eyebrowing unless the frame is equipped with revolving top clearers. On cold days, unless we are able to keep the temperature as high as 80 degrees, we have a good bit of lapping on the front rolls, especially with a high degree of humidity which causes the rolls to become sticky. Although synthetic rolls are more expensive, we find they last longer and only have to be rebuffed about once a year. The length of time between buffing would depend on the yarn numbers being spun and the twist in the roving. We believe our saving to be in the rebuffing of the rolls. We are running yarn counts from 6s to 30s warp.

(Any reader with experience or information on any of the questions here discussed is urged to write to the Editor of "Cotton", giving the details, so we may continue further this exchange of experiences on these timely and useful practical points.)

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Care of Electric Motors

Electric motors are the muscles of industry and if they are regularly serviced they will give dependable, long-time service. But neglect leads to breakdowns—with consequent interruptions in production—and, perhaps, to fire.

The following ten commandments of motor maintenance have been issued by Safety Research Institute, 420 Lexington Avenue, New York City, who point out that they should always be observed but, at the same time, shops where motors are used should always be protected with suitable types of approved fire extinguishers. Vaporizing liquid and carbon dioxide are suitable for this purpose since their contents are non-conducting and will not cause corrosion or otherwise damage motors.

I. Open-type motors should be blown out weekly; those operating under severe conditions, daily. Use no more than 50 pounds of pressure to avoid possible damage to insulation.

II. Follow manufacturers' instructions in lubricating motors. Too much oil is as bad as too little, causing deterioration of insulation.

III. Inspect bearings weekly or oftener. Feel temperature, examine for excessive end play, and make certain oil rings are working.

IV. Inspect brushes and commutators weekly or oftener. Make certain brushes are seated perfectly and commutators are smooth. Use proper grade of carbon brushes to prevent wear of commutator and reduce sparking.

V. Where motors operate with excessive belt tension, check the air gap between rotor and stator every week. A monthly check of motors in average use is sufficient. Difference in the width of the gap around the circumference of the rotor will indicate extent of wear on bearings.

VI. Where motor leads are exposed to view, check them weekly to see that connections are tight, well insulated and protected, and free from oil.

VII. Inspect ground connections weekly, keeping them tight and in good condition. This is for the protection of employees, and for the proper operation of over-current protective devices.

VIII. Set up a regular schedule for overhauling motors. Most motors should be overhauled annually, while those in severe service should be overhauled twice a year or oftener.

IX. Dismantle the motor for a complete overhaul job. Wash all parts with carbon tetrachloride or some other safety solvent. Paint the windings with a good, oil-resisting insulating varnish.

X. Keep the area around the motor as clean as the motor. Arcing frequently ignites oily material that has not been cleaned up.

When fire breaks out in or around a motor, shut off the power before attacking the flames, if possible. Do not depend upon the circuit breaker operating or a fuse blowing out, but shut off the power. This will minimize damage to the motor and prevent continued arcing from re-igniting the fire. When the motor or conductors are dead, direct the fire extinguishing agent into the motor or upon whatever is burning, just as in any other fire. As soon as the fire is out, ventilate the area thoroughly to clear out smoke and fire gases.

CURRENT TEXTILE TOPICS

New Heights to Conquer

TEXTILE manufacturers in the first year of the war, and indeed through the period of national defense, achieved wonders in behalf of the Nation. Yet the United States, now entered upon its second year of war, is making still more extraordinary demands upon the textile industry. The mills have new heights to conquer, in supporting the war, albeit apparently at the further expense of civilian trade, since capacity seems to be reached.

Conditions in recent months have emphasized the vast utility and importance of cotton to the direct war effort. The war has assumed not only staggering proportions, but unexpected phases in which cotton is one of the paramount elements. The fiber of 10,000 uses in peace times has proved to be all-essential for the military services, in uses from uniforms to a great number of equipment forms.

New areas of conflict, in contrast with those of the last war, have created unusual pressure for cotton constructions. It was notable that no nation ever delivered so many men to remote places in one year as did the United States after Pearl Harbor. In 12 months the total landed all over the globe was around 900,000 men (now figured at a million or more), against half a million sent to Europe in the first 13 months of World War I. A large part, as is well known, have gone to warm or tropical climates.

Producing for Needs of 600,000,000 or So

In one sense of the word, the cotton manufacturing industry has dropped back 50 years or more, viz., to the time when the mills were concerned chiefly with efforts to produce enough goods. We have since gone through a period of over-expansion and subsequent readjustment, with refinements of machinery reducing the amount of equipment required to meet needs geared largely to domestic consumption. Now we find efforts to produce enough the chief problem again.

But today this country has assumed obligations to numerous allied nations. As one country or another is occupied by American forces, new lend-lease considerations are faced. Thus it has been indicated in conferences between the cotton goods advisory committee and the War Production Board that a minimum of 900,000,000 square yards of cotton goods must be set aside for lend-lease account alone in 1943 and as much as 1,500,000,000 yards might be needed.

Thus the American industry faces the problem of meeting the civilian needs of 130,000,000 persons at home, supply such wants as it can for an estimated 470,000,000 in the world outside, and meeting requirements of the military services which alone promise to take about half of the full capacity of the mills.

Goods for Domestic Civilian Use Dubious

If one could project himself outside this extraordinary situation, it would all seem like a fantastic dream. Where domestic civilian needs will fit in the 1943 picture is a conundrum. The lend-lease business is all a part of war strategy and reckoned of utmost importance. Civilian populations which have been starving for goods under Axis domination may be won over the more readily as supplies follow occupation by American troops.

Yet the mills are faced with the problem of supplying a triple demand—civilian, war and lend-lease—with the smallest number of spindles in a couple of decades. This machinery position promises to help the post-war situation, wherein demands of the home population and peace-time exports (perhaps unusual till world reconstruction evolves) will be the mill dependence, but for the present expansion is needed and hardly attainable.

With problems of labor decrease, absenteeism and machinery replacement, to maintain output of more than 12,000,000,000 yards annually is indicated to be difficult. There is some possibility of increased yardage where full width of looms has not been utilized and that is being investigated.

All in all, meantime, the prospect of meeting any near adequately civilian trade demands that are still large is dubious. However, this may not be a disadvantage from the long-range standpoint. Distributive, especially retail stocks, are said to have risen steadily in the face of high consumer sales. A low inventory position, logical if sales remain large, at the end of the war would be most healthy.

Twill-type Teca blend containing Eastman crimped acetate rayon, makes a teen-age two-piecer. The fabric, from Alan, is a crisp-tailoring, firm weave that has a high degree of crush-resistance. Courtesy, Tennessee Eastman Corporation

Re-negotiation Throws Trade into Confusion

December found the mill industry in something of a turmoil because of "a rapidly developing acute situation in the field of contract re-negotiation" with the War and Navy Departments, as it was characterized by The Cotton-Textile Institute. The executive committee of the institute voted to request the Comptroller General of the United States to make recommendations to Congress to the end that "the confusion, disorganization and lack of uniformity at present existing be eliminated."

Once more the industry was chafing under a procedure which, as charged by a high wool official months ago, entails repudiation of contracts even when made by the government on its own terms. The case is not one of objections from producers who have sold at unregulated prices and reasonably could be subject to scrutiny of check-up. It is one of protest against changes where contracts were made subject to ceilings set by the OPA after its own investigation of costs.

In any event, the mills have been asking for some definite standards to be set up by Congress. Amendments to the Revenue Act providing for re-negotiation are held loosely drawn and leaving a good deal of discretion to individual agencies.

As to excessive profits, one authority offers the opinion that gross earn-

ings have been confused with net. He said that net earnings would not be as large for 1942 as for 1941, when there was a tremendous rise in cotton affording inventory appreciation. Mills, on the other hand, have been wearing out machinery rapidly through operation on three shifts and will have difficulty in making replacements under the present tax bill. Such things are deemed reasonable to consider when excess profits are charged.

New England Mill Situation

THROUGH the first year of the war, the mills of New England have constantly and effectively worked to further the strategic program of the government as their paramount function. They have adapted their production to filling the important needs in combed goods, for which the district over decades has developed a special technique and proficiency. They have also modified their lines to meet the military call.

While predominantly still a center for combed fine fabrics, the district has provided an increased share of coarser lines as mills which could readily do so responded to the requests of the government. Plants have been changed to fill the need for expanded output for goods which can be made in greater yardage with the same facility.

Today, however, the mills are striving to maintain the high war production that has been achieved in the face of constantly increasing difficulty. That is the main issue for the start of another year. Dwindling ranks of skilled labor, increasing absenteeism under the prosperous conditions for workers and strain upon equipment from hard use all make maintenance of output a difficult problem.

Trends of Output in War to Date

Statistics of the government on production are significant of the success that the mills of this district have had in meeting the extra obligation of filling military requirements; also of the losing struggle now under way to maintain a high rate. November consumption of cotton in New England, for example, was the smallest monthly total since February, 1941. This can be explained only by physical difficulties in production at a time when demand is expanding.

For the first four months of 1939-1940, beginning in August or a month before the war abroad started, the cotton consumption in New England was 325,536 bales. In 1940 the same period showed 326,368 bales; 1941, 419,395 bales; 1942, 403,324 bales.

In November of 1939, the monthly total was only 88,932 bales. A rise to 91,985 bales was made by January 1940, but the war uncertainties led to a decline culminating in 60,488 bales in June, when the national defense program began.

That brought a trend upward to 97,953 bales in October, followed by a dip to 83,005 in November. But the underlying trend was strong. January, 1941, passed 100,000 bales. April reached 116,059 and only February and November were under 100,000 in 1941.

October, 1941, hit the peak for the war to date of 119,387 bales. November, the month before war against the United States was started, showed a reaction to 98,000 bales. Since then a rise to 118,827 bales in April has been a highlight, but a drop below 100,000 was realized by August and the second for 1942 occurred in November. The total of 95,411 bales for that month hit bottom since the 94,227 of February, 1941.

Civilian Markets Suffer Consequences

Declining production this fall is consistent with forecasts and the inevitable result of various problems, notably the situation in labor. The strict regulations of some northeastern states, with only moderate relaxation even in the cause of war, help to leave this section hamstrung in production. Thus the late months of 1942 show mills well behind the same period of 1941, although cotton consumption for the country continues to gain.

Around the middle of December, the market for combed fine goods was getting reports indicating that even some of the procurement agencies were showing nervousness over securing supplies, although the market was stalled in December by a price impasse between the OPA and the fine goods trade. OPA permitted sales on memorandum, with sales subject to prices eventually to be established, but mills avoided making commitments pending action.

Apart from this price encounter, the situation and outlook for civilian goods was to say the least uncertain. Virtually no combed yarn cloths were being offered to the trade by mills in much of December. War developments calling for more cotton goods, with little hope of holding production to capacity, pointed to inroads upon the output for civilian uses.

Profits Issue Evokes Conflicting Opinions

After hanging fire for several months, the issue of price re-adjustments for fine combed cottons still found OPA and the trade at loggerheads late in the past year. Reports in the goods market were that OPA, looking at substantial earnings of the past, was hard to convince of the need for price relief. Yet it appeared that some lines would be discontinued as unprofitable if higher prices would not be allowed.

Manufacturers objected to the idea of a fixed fair percentage of profit which mills would be allowed, say six per cent, instead of a ceiling on a general class of fine goods. They held it unfair, moreover, to figure current prices on the basis of pre-war levels and cost conditions. For fine goods mills were run generally at losses from 1937 to 1939, it is noted, while carded cloth units in many cases were on a sound basis.

Even though the OPA made a comprehensive study of war-time production costs and established ceilings on a percentage profit return, this would not cover the situation unless the margin were liberal, in the opinion of market observers. In other words, a reasonable profit of the suggested six per cent for current conditions would not suffice to take care of pre-war losses or guard against post-war contingencies.

Mill men, in their financing, have had to consider always the balancing of profits in times of prosperity against losses of alternating periods in an industry of peaks and valleys. Such a consideration, it was felt, also should be given by control agencies of the government.

Licensee Handbook on "Crown Rayon"

American Viscose Corporation, 350 Fifth Avenue, New York City, have issued a special licensee handbook describing all details of its new "Crown" tested plan, the fundamental purpose of which is to provide an added incentive for the production of serviceable rayon fabrics containing "Crown" rayon yarns and staple fibers. The handbook is furnished primarily as a guide and reference book to each firm that is licensed to make "Crown" tested rayon fabrics. In addition, a limited number of copies is available for distribution to other textile companies interested.

The first section of the new handbook describes in general the operation of the "Crown" tested plan. It points out that under the plan, licensees submit samples of fabric for testing and that to qualify for "Crown" tested identification, these fabrics must contain "Crown" rayon and pass tests for fabric strength, seam slippage, dimensional restorability, color fastness, permanence of finish, etc.

"THE SITUATION" as Seen Across an Executive's Desk

War Manpower

December 18, 1942

THE PRESIDENT has given War Manpower Commissioner McNutt the power to control the supply of human energy that must flow through the channels of our complicated business, industrial and military life.

The struggle for a reasonableness among men required for agriculture, industry and military forces will not be abated. The question will be one of relativity which will have many interpretations and answers. Again, within the field of industry there will likely be classifications of essential industries and non-essential industries, and these will have priorities over labor supply. There will be frozen areas and worker transfers and replacements, all of which will require the utmost fairness and diplomacy.

In the freezing and rationing of supplies, and in the preferential ratings assigned thereto, the government was dealing largely with materials, now the government steps into the field of "human relations", of private enterprise and individual desires. In this area there will have to be a new code of ethics developed.

With America engaged in a war of global extent and with the public now sufficiently informed to appreciate its duties, it will not be difficult to induce people to do the needful to secure manpower efficiency. They will be glad to shift their locations and work in new ones, but they are not going to be willing to be forced into unessential expenses and to join organizations or unions merely for the sake of appeasement. This is still a democratic nation even though we may be employing dictatorial methods for the purpose of winning the war.

To be specific, there are some very pertinent questions that Commissioner McNutt must answer satisfactorily, or better still, on which he should issue some very clear directions. Every one realizes that abnormal times produce abnormal situations, and regardless of the shifts made in manpower, after the war has been won, there will be a readjustment and a reshuffling of labor moved.

Will Mr. McNutt require men moved from unorganized plants to organized plants to become members of a union?

Will Mr. McNutt endorse the principle of requiring men who work on government contracts to pay a fee before they can work?

Will Mr. McNutt allow workers to become "black-listed" either because they belong to a union or because they do not?

Will Mr. McNutt appreciate that his job is not reformation but salvation? Will a reasonable policy for learners be adopted?

If and when the government should take over the problem of labor distribution and assignment, will Mr. McNutt take into consideration certain social traditions that operate in various sections and do everything in his power to observe them?

The human equation is strongly evident in all of these questions. People do not move as easily and silently as do materials. Coercion shall be used only to the extent necessary and no further, and this statement must be given a reasonable and fair interpretation.

Mr. McNutt recently stated:

"Individual workers have a responsibility to deliver a full day's work on every working day. Labor has a responsibility to make the rank and file feel the terrific urgency of top production; a responsibility to control the actions of unruly locals; a responsibility to relax for the duration those working rules and practices which result in lost man-hours; and finally, a responsibility to co-operate with management in the solution of common problems."

"The Management-Labor Policy Committee has summarized the problems of the employers and listed their obligations. Let me quote from their recent report: 'The Committee respectfully but urgently calls upon government, industry, agriculture and labor for strong leadership, aggressive action and maximum co-operation to bring about the following:

1. Uniform acceptance of and compliance with the War Manpower Commission's policies and directives.
2. Elimination of wasteful labor turnover in civilian war activities.
3. Acceleration in the rate of transfer from non-essential to essential activities.
4. Acceleration in the rate of mobilizing, training and employing those who are presently unemployed but who are able to render service.
5. Maximum utilization of labor in a manner insuring maximum use of the skills and capacities of workers.
6. Accelerated rate at which men of the military age group, who are engaged in essential activities, can be released for service in the armed forces.
7. Elimination of all barriers, restrictions or obstructions incidental to successful accomplishment of points 1, 2, 3, 4, 5, and 6 above.

"This is precisely what the War Manpower Commission asks of you."

Taxes

Not only will management be harrassed and confused about its own taxes and that of its corporation, but the new tax bill places upon it the burden of Victory taxes which will affect every one of the working force.

There are three new duties added to the already over-crowded duties of management: (1) that of bookkeeping; (2) that of collecting and remitting; (3) that of explaining and satisfying those from whom the tax is collected.

There might also be added the thousands of questions made necessary by the application of the income tax law. All of these extraneous duties are expensive and unremunerative to management and yet they must be done as a public service by patriotic people.

These new jobs for management will require tact, diplomacy, and industry and an increase in cost of overhead expenses. In some cases, the paper and bookkeeping work has grown so great that certain organizations have had to build or rent special office buildings to carry on the work. The public and the government often fail to appreciate the incalculable time, energy and free service that business contributes. If all such service could be measured in dollar values, this contribution made by industry would be staggering. These lines are not written as a lament but to call attention to a service that is often overlooked.

Politics

It is true that American business which has developed under the free enterprise system chafes under the system of regimentation under which it is now forced to operate. There is always the announcement by business of its being willing to operate under regimentation necessary under the war regime, but then the question of what is necessary and what is not is always an issue.

Again, business is always watching government trends to try to decide which measures are only temporary and which will be permanent because every one who is intelligent realizes that post war conditions will carry over certain controls for a while and that eventually, the principles that will finally govern peace time operations will evolve.

For this reason, the political situation is becoming of more and more value as the candidates with their platforms step out into public life. The last election indicated a wearisome restlessness over the politics of the present order. The changes in Congressional names indicate that the people expect Congress to assume its rightful and constitutional duty. They must as-

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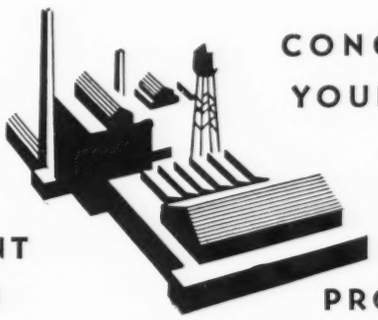

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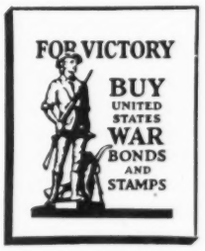

sume their obligations and discharge them as they are duty bound in a democracy.

The trend toward representative government has set in again but business men must not grow too restive or intolerant so that a reaction to former policies will be renewed.

The Business Man

In December, the National Association of Manufacturers held their three-day annual convention in New York. The entire theme of the meeting, aside from their devotion to the cause of the war effort, was a discussion of trends in government and what would happen to American business after the war.

Walter Lippman, in his syndicated column, devoted two articles to this meeting and its discussions, Most of the speeches were complaints about the restraints, and a rather narrow interpretation of the term "individual initiative". The interpretation as discussed by them applied narrowly to the already and easily understood principles of prewar or predepression business and, for the most part, had not extended its application to the broad social responsibilities of business in which only business can operate and in which the present government is ultimately doomed to destruction.

In one of the articles, he poses the question, "What is the future of the U. S. business man?" and then says: "The answer to this question will depend primarily upon what American business men think of themselves, and their historic role on the great stage of human affairs." He then discusses the business man in other countries and finally comes to the statement that the American business man must lead in this country if it is saved, and adds the question: "Will the American business men assume very heavy burdens in order to continue to lead our industrial society or will they become so absorbed in complaining about their burdens that they will not be able to lead? This is a very real question. It is the answer to this question which will determine the future of American business men and, I believe, the very future of American industrial society under private management . . .

"The imperturbability which causes a man to have no fears can, in an active life, arise only from his confident belief that he has a mission to perform. If he arrives at this belief, he will cease to be much concerned with his fortune and his prerogatives and will become much more concerned with what he has to accomplish. Then he can accomplish it and then he will ride the storm."

Faith in the World of Tomorrow

Since this review has assumed a somewhat moralizing and philosophical trend, perhaps it should continue so to the end. I have faith in the world of tomorrow. The minds and thinking of most people went to sleep in the highly delightful days of the "twenties" when every one thought that they were on the road to perpetual prosperity, "with two cars in every garage and two chickens in every pot".

The days of the debacle, stretching up into the thirties, awoke the sleeping minds of America with startling confusion and through most of those days they groped experimentally and finally were dragged into a world conflict of terrific impact.

Now in these "forties" with adversities of all kinds besetting us, we are getting down to the grass roots in our thinking, and the mind of the average citizen has begun to operate again.

Those who have decried the scientific movement will find that finally science can make war unthinkable. It can be even more horrible than this, believe it or not. The principles of science can then be turned to peace. They will be turned to peace because the leaders of nations will have such dreads of war that in their study of preventions they will discover the

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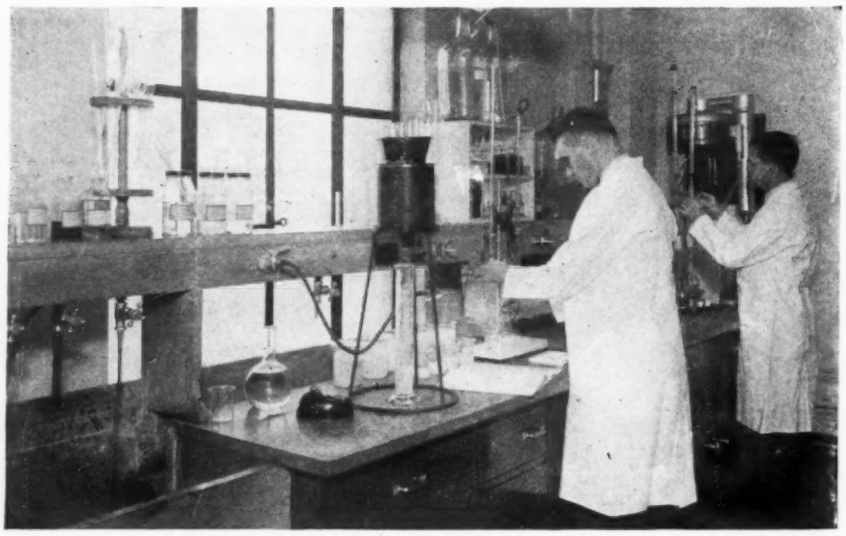
Penick & Ford Opens New Textile Service Laboratory



A general view of the new textile service laboratory of Penick & Ford, Ltd., Inc., at Atlanta

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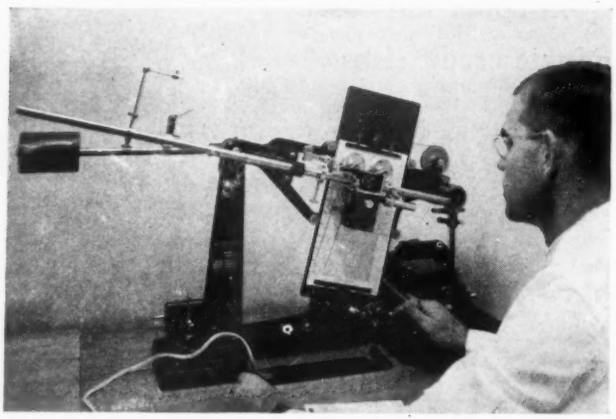

The inclined plane tensograph for testing and recording the strength and elongation of single yarns, installed in the new Penick & Ford laboratory

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Penick & Ford, Ltd., Inc., have completed the installation of a new textile service laboratory in connection with their southern headquarters in the Bona Allen Bldg., Atlanta, Ga. The laboratory and its facilities are available to all textile mills, particularly in assistance in connection with warp sizing and finishing problems. The laboratory has complete chemical analytical and physical testing equipment. In addition to standard facilities for this type of work, the equipment includes considerable special apparatus, such as a Scott inclined plane tensograph for testing and recording the strength and elongation of single yarns. A portion of the laboratory is equipped for constant control of temperature and relative humidity in which accurate testing of yarns and fabrics is carried out.

We couldn't buy it—
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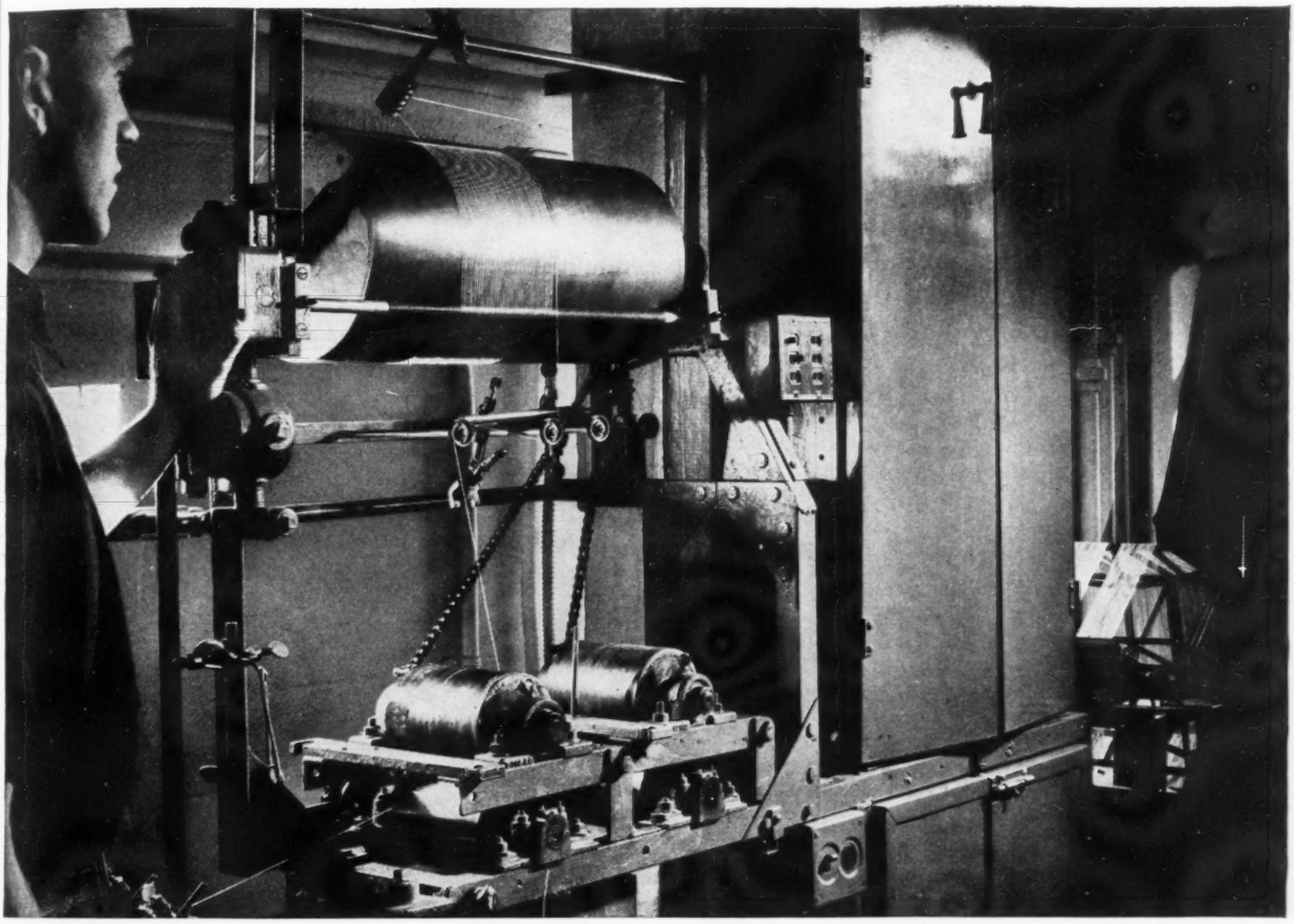

YARN SLASHER — When it was found that no standard laboratory yarn slasher was available, our laboratory research men devised this ingenious machine which closely approximates textile mill equipment. This machine is used in sizing, coating, impregnating and finishing yarns. Through precise control of time, tension, temperature, and drying rate, mill results are obtained under laboratory conditions. Although the photograph shows the yarn being can dried, the equipment may be converted for use as an air dryer. After treatment and drying, the yarn is automatically wound in skeins on the frames at extreme right.

WHAT IS YOUR PROBLEM? Is it a question of yarn sizing, dye penetration, gray goods desizing, or fabric finishing? Whatever the problem, the Rohm & Haas Sales Service Laboratory is prepared to offer its suggestions.

In this modern and complete textile laboratory there is a specialized piece of equipment for testing and checking every plant operation. If a standard laboratory machine is not on the market, our technicians have designed equipment to accomplish the desired result.

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DEGOMMAS—*Concentrated diastatic and proteolytic enzymes for desizing.*

RHOPLEXES—*Aqueous resin dispersions for finishing and coating fabrics.*

RHONITES—*Modified urea formaldehyde resins for textile finishing.*

PROTOLIN—*Stripping agent for wool stock and piece goods.*

FORMOPON—*Reducing and stripping agent in acid systems.*

LYKOPON—*Reducing and stripping agent in basic systems.*

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA, PA.

Manufacturers of Leather and Textile Specialties and Finishes . . Enzymes . . Crystal-Clear Acrylic Plastics . . Synthetic Insecticides . . Fungicides . . and other Industrial Chemicals

America's Highest Production Honor Won by Leading Textile Mills

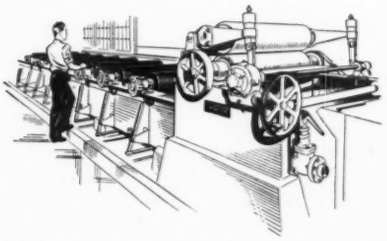
Call the roll of Army-Navy "E" Award winners in World War II . . . and you will see how magnificently the Textile Industry has responded to the demand for clothing and equipment for America's armed forces.

The tremendous yardages of fabrics needed to win the war are being turned out with remarkable efficiency. Uniforms . . . parachutes . . . tents . . . powder bags. Cottons . . . woolens . . . synthetic fibres. Duck . . . drills . . . twills.

The Textile Industry is meeting the challenge. The Army-Navy "E" is the way the procurement services have of saying "Well done."

Shown on this page are the presentation ceremonies that have taken place at a few of the mills. There have been many others. There will be many more.

Many Winners of "E" Awards Use Butterworth Machines



We are proud to play a part in the mighty drama of Textiles for Victory.

In many of the mills honored for production, Butterworth Machines help to speed quality and quantity of output in the Wet Finishing Department.

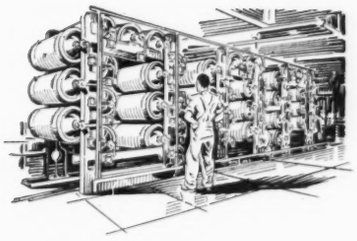
These mills are more than customers to us. They are old friends of the Butterworth Organization. We are glad to be partners with them once again in a great fight to crush the attackers of America.

Lanett Bleachery and Dye Works, West Point, Ga.

Seeing that Uncle Sam gets the fabrics he wants properly finished and carefully dyed according to specifications is now a full time job at Lanett Bleachery and Dye Works. It won them the Army-Navy "E." Shown at the presentation ceremonies, left to right, standing: George H. Lanier, president; Gov. Frank M. Dixon, of Alabama; Joseph Starnes, Representative in Congress, of Alabama; Maj. Gen. Clifford L. Corbin, Assistant Quartermaster General; Brig. Gen. Walter S. Fulton, Commanding General, Fort Benning, Ga.; Lt. Col. Robert T. Stevens, Chief, Textile Clothing and Leather Sections of the Office of Quartermaster General. Front row, left to right: F. A. Wheelock, of J. B. Warne, Inc.; John A. Simmons, general manager of Lanett Bleachery and Dye Works; Joseph B. Warne.

J. L. Stifel & Sons, Inc., Wheeling, W. Va.

The presentation of the Army-Navy "E" is regarded by J. L. Stifel & Sons, Inc., as one of the most memorable events in their 107 years of existence. Stifel is supplying ever increasing quantities of their famous "Boot Brand" Fabrics to the Army, Navy and Marines. Shown holding the flag, left to right, are: Lt. Arthur C. Stifel, Jr.; Lt. Col. R. T. Stevens, Quartermaster General Office; Arthur C. Stifel, Sr.; Col. John Welch, Richmond Quartermaster Depot; Col. Harold C. Fellows; Capt. L. A. Herron; Lt. J. A. Koerber, Philadelphia Quartermaster Depot; Lt. Com. C. M. Royal.



All of the mills mentioned as "E" Award winners on this page use Butterworth Machines during wet finishing operations . . . for bleaching, boiling-out, drying, calendering, dyeing or any one of the many operations necessary to give our armed forces the clothing and equipment they need.

Butterworth Engineers are at the service of mill engineers and superintendents to keep production rolling . . . to locate and break annoying bottlenecks.

We are producing gun mounts for the United States Army. But, all of our facilities not required for Ordnance production are enlisted for the duration to help *you* solve your finishing problem.

Let our experience serve you now.

H. W. BUTTERWORTH & SONS CO., Phila., Pa.

Serving the Textile Industry Since 1820. Offices in Providence, R. I., and Charlotte, N. C. In Canada: W. J. Westaway Co., Hamilton, Ont.

Munsingwear, Inc., Minneapolis, Minn.

By giving priority without delay to Government business, Munsingwear, Inc., increased its volume for the armed services from 1 million dollars to 5 million dollars in a year's time. The company is now operating three shifts and is producing 16,000 to 20,000 undergarments a day. Shown holding the Army-Navy "E" pennant, left to right: Lt. Col. John N. Gage, Executive Officer, Chicago Quartermaster Depot; Ernest L. Olrich, President, Munsingwear; Brig. Gen. Joseph E. Barzynski, Commanding Officer, Chicago Quartermaster Depot; Gov. Harold E. Stassen, of Minnesota; E. C. Wilson, Vice-President, Munsingwear.

Cramerton Mills, Cramerton, N. C.

The story back of the winning of the coveted "E" by Cramerton Mills dates back to 1930, when Cramerton assisted the Quartermaster Corps in the development of the present Army Khaki, the official cotton uniform cloth. Now Navy and Marine Corps officers wear it as well. This is by no means the only military fabric made by Cramerton, but its production has been a major objective for 12 years. Shown at the presentation ceremonies are, left to right: Gov. J. M. Broughton, of North Carolina; Maj. Stuart W. Cramer, Jr.; Maj. Gen. E. B. Gregory; Capt. Alfred T. Clay, U. S. N.; Grover Cleveland Bridges, oldest employee.

Pacific Mills, Worsted Division, Lawrence, Mass.

In receiving the Army-Navy "E" Award, the Pacific Mills Worsted Division also earned the distinction of being the first worsted mill in the country to be so honored. The mill is working three shifts a day in all departments making military fabrics. Shown at the presentation, from left to right: Capt. G. C. Hall, U. S. N.; Maj. Gen. Clifford L. Corbin, Chief of Procurement Services, Office of the Quartermaster General; Gov. Leverett Saltonstall, of Massachusetts; Mayor Meehan, of Lawrence; E. D. Walen, vice-president, Pacific Mills, Worsted Division; Henry M. Bliss, president, Pacific Mills.

Aberfoyle, Inc., Norfolk, Va.

The Norfolk plant of Aberfoyle, Inc., won the Army-Navy "E" for outstanding production of nylon parachute cloth for the Army. Aberfoyle started weaving rayon goods more than 30 years ago and is one of the first mills to weave nylon into much-needed parachute fabric. The plant has been running two months ahead of schedule in fulfilling Government contracts. Edwin Lord, president of Aberfoyle, Inc., and Mrs. Mabel McDaniel, elected representative of the workers, are shown accepting the flag.

Boott Mills, Lowell, Mass.

The Boott Mills hold the honor of being the first cotton mill in New England to win the "E" award. They are also the first Lowell industry to be so honored. Boott Mills are now 100 per cent on Navy twill. Executives of the company and naval officers who officiated at the presentation are shown, left to right: J. Rogers Flather, assistant treasurer; Frederick A. Flather, Sr., treasurer and manager; Rear Admiral W. J. Carter, chief of Naval Supply Corps; Capt. Frank P. Delehanty, U. S. Navy; Frederick A. Flather, Jr.

Butterworth

PRODUCING GUN MOUNTS FOR THE UNITED STATES ARMY

principles of co-operation. Some are already being discovered and are anxiously awaiting an opportunity for action. Science must not be stopped, it must be used for its rightful purpose, that of making a better world society.

Again learning new ideas and acquiring new habits are difficult tasks. Putting all of the parts of life together and trying to outline a plan of individual or group action that does not upset society is difficult.

Under the impact of regimentation and experimentation, the average mind of America has learned much, the most important of which is that it does not want to live in a socialized or totalitarian state. I believe it has learned, or is learning what it must do to avoid it. The Gallup Poll indicates a growing healthy electorate. It is real comforting to assemble all of their studies and see how the cross-section of voters think.

I attended the convention of the NAM last month and while there were complaints and conservative speeches, harking back to a day that does no more exist, now and then there appeared a business man whose interpretation of the new responsibilities of business was inspiring. The business men of America are intelligent and will finally step in to save the post war world just as patriotically as they have served in winning the war. If they don't, then this nation is lost.

We shall retain democracy and individual initiative but both will be broader in meaning and scope in the post war world. This great conflict has brought to the surface many of the national and international sore spots in our society. They stand up like sore thumbs on an individual. This war has put all people into close touch with each other, first the groups within the nations, and secondly, the nations themselves. This nation is now one big community and every group and each section knows and understands the problems of the other, hence there is more intelligence and more tolerance, more altruism and less selfishness.

People who are wise must be able to live above prejudice and intolerance unless they are well founded. I believe the soul of America is expanding and showing to all that there have been errors in their thinking and that the electorate of America desires that these errors be eliminated and that this nation shall proceed under the principles of democracy and free enterprise under its new mandates of conscience.

Crompton & Knowles Gets Army-Navy "E"

The achievements of another outstanding textile machinery manufacturer, in converting to products for the war effort, were recognized when the Army-Navy "E" award was presented to Crompton & Knowles Loom Works, Worcester, Mass., loom manufacturers for more than 100 years. The ceremony occurred on Thursday evening, December 17, in the Worcester Memorial Auditorium, before an assembly of 2,500 employees, with their families and honored guests. Roy F. Williams, general manager of the Associated Industries of Massachusetts, was master of ceremonies. He spoke of the history of Crompton & Knowles' 102 years of demonstrations of ingenuity on the part of its management and employees toward the accomplishments which were the basis of the award. He pointed out that this company could properly claim that there is not a single member of the armed forces who is not served by its products, either insofar as fabrics from its looms are concerned, or with respect to the manufacture of the more exacting requirements of machine tools and armaments. Leverett Salstonstall, governor of Massachusetts, and Wm. A. Bennett, mayor of Worcester, were other speakers.

At the C. & K. "E" ceremonies. Left to right, Brigadier General Lewis, Governor Saltonstall, Captain Hyland, Mayor Bennett, President J. H. Tinsley, and Rear Admiral Cluverius

John F. Tinsley, president and general manager of Crompton & Knowles, accepted the award on behalf of management; and Harry Waite, the oldest worker in terms of service (58 years) received it on behalf of the employees, along with George W. Cleveland, treasurer of the Employees Relief Association.

◆

Atwood Machine Company, Stonington, Conn., received the Army-Navy "E" production award at ceremonies on December 1. The presentation of the award was made by Captain William D. Puleston, U. S. N. (ret.), and accepted by Franklin R. Hoadley, president, Atwood Machine Co. Lieut.-Col. Frank A. Young, U. S. A., presented the "E" badges, with a talk of acceptance in behalf of the employees by Richard E. Fritz. Lieut. John L. Lodge, U. S. N., was master of ceremonies.

On December 29, the nylon research laboratory and pilot plant of E. I. du Pont de Nemours & Co., Wilmington, Del., received the Army-Navy "E". This is the third production award for nylon units of the company, and the sixteenth to duPont plants. The Seaford (Del.) and Martinsville (Va.) nylon plants received it earlier in December.

◆

Textile Machine Works, Reading, Pa., one of the first industries in America to receive the Navy "E" for excellence in production, received its third output award in December when the Army-Navy "E" with two stars was unfurled at the plant. The new banner is a renewal of the Naval Ordnance Flag and "E" pennant awarded July 25, 1941, and the All-Navy "E" burgee presented May 18, 1942. The presentation was made by Lt. E. P. Douglas, of the U. S. N. R. Henry Janssen, president; Ferdinand Thun, secretary-treasurer; and Dr. John E. Livingood, vice-president, were on the platform as the flag was presented. A roll of honor bearing the names of 400 employees now in the service was unveiled as a part of the ceremonies.

◆

Other textile plants recently receiving the "E" include Mathews Cotton Mills, Greenwood, S. C.; Suncook (N. H.) Mills, and Aragon-Baldwin Cotton Mills, Whitmire, S. C.

You can use them . . . to make your war packaging more efficient . . . to help reduce damage in transit and thus curtail waste of materials, manpower, machinery and transportation facilities.

"How To Pack War Materials" was "authored" by seventeen manufacturers who found the answers to their new packaging problems in the H & D Package Laboratory. From their experiences you will get ideas which can be readily incorporated in your own corrugated shipping boxes, to save you time and money all along the line.

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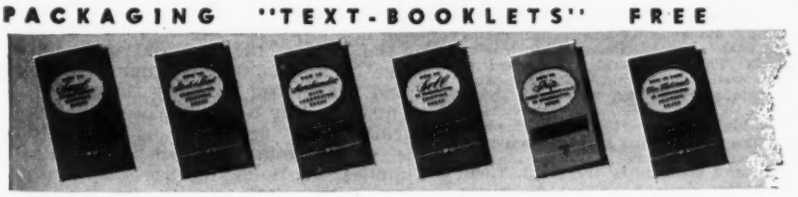

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TIMELY NEWS ITEMS with a TEXTILE SLANT

William C. Carter has been elected president of **Link-Belt Co.**, 307 N. Michigan Ave., Chicago, Ill., succeeding **Alfred Kauffmann**, who has resigned because of ill health. Mr. Carter, who has been vice-president for 14 years and executive vice-president for the past year, is a graduate of the University of Illinois. He joined the company in 1902 as a draftsman.

Mr. Carter

Leonard Shapiro has joined the research staff of **Warwick Chemical Co.**, West Warwick, R. I. He received his master's degree at M.I.T. in 1936, and has been associated with the Interlaken Mills, Fiskville, R. I., as plant chemist. His new duties at Warwick entail research and the development of new products for the textile industry.

Ashworth Bros., Inc., Fall River, Mass., announce the appointment of **George A. Davis** as manager of the woolen and worsted department of their Worcester and Philadelphia plants—the American Card Clothing Company. For the past nine years he has been representing the company in New England; previously he was assistant purchasing agent of the American Woolen Company, with whom he had been associated for 20 years.

George B. Chabot, Jr., of the staff of the Calco Chemical Division, **American Cyanamid Co.**, Bound Brook, N. J., has been promoted to the position of salesman with headquarters in Chicago. He has been with Calco for 12 years, specializing as a colorist and standardization expert. Since the outbreak of hostilities, he has been identified with technical service on government contracts.

M. G. Huntington has been made manager of the Washington office of the national sales and service division of **The B. F. Goodrich Co.**, Akron, Ohio. He has been with the company since 1923. He had been sales manager of the special accounts department of the company's associated lines division, and joined the national sales and service division in October 1942. In his new capacity he succeeds K. D. Smith, who assumes new company duties with headquarters in Detroit, Mich.

Harry A. Richbourgh has become sales representative of **Tide Water Associated Oil Company**, with headquarters at 123 West Bell St., Statesville, N. C. He will cover the Northern Piedmont section, including a part of Virginia. He is associated with the company's eastern division office at 1122 South Boulevard, Charlotte, N. C., where **K. M. Slocum** is industrial products sales manager of the southeastern district.

Ragan Ring Co., East Point, Ga., has appointed **T. B. Hunt**, formerly of **A. B. Carter, Inc.**, as representative in Georgia, Alabama, and other portions of the southern textile territory.

Roger W. Allen, district sales engineer for Foxboro Co., at Atlanta, Ga., for six years, has been made southeastern district manager for **Wheelco Instruments Co.**, of Chicago, with headquarters at 305 Techwood Drive, Atlanta.

John M. Reed has been appointed service manager for the southern territory by **Ashworth Bros., Inc.**, with headquarters in Charlotte, N. C. Mr. Reed has represented the company in the South for more than four years. Formerly he was with Saco-Lowell Shops, in Biddeford, Maine, and in the Greenville, S. C., sales department. His new appointment adds to his responsibilities with Ashworth.

New Publications of Textile Interest

Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill. "First Aid for Faithful Chain Drives", folder No. 1951, showing how to keep chain drives running; what to do for worn chain and worn wheels; how to get new life from old chain pins; and seven suggestions to make any chain drive run better and last longer.

The B. F. Goodrich Co., Akron, Ohio. A revised catalog section on the company's lines of steam hose, containing simple, easy-to-read rules for the care and maintenance of steam hose, as well as detailed instructions on the proper methods to attach couplings. Data on inside and outside diameters, weight and number of plies, are also listed.

Alemite Division, Stewart-Warner Corp., 1826 Diversey Parkway, Chicago, Ill. A 50-page catalog of Alemite industrial lubrication equipment, and a leaflet describing the Alemite "Lubrikart". The catalog has a quick comprehensive selection guide for convenience in determining the lubricating equipment best adapted to any lubrication requirements. The equipment is charted in accordance with the kind of lubricants pumped, container capacity, operating power and pressure.

The portable "Lubrikart" is designed to reduce maintenance time to a minimum, bringing a complete power lubrication department to any machine in the plant. These units, compactly designed and mounted on hand trucks, may be easily maneuvered throughout industrial plants.

A Review of the Cotton Waste Market

Boston, December 17, 1942

COTTON WASTES are essential commodities in a number of industries, many of which under wartime conditions are being forced into a secondary position as to production, which situation is likely to continue for the duration. Not a single item of waste can be named which has not had its absorption possibilities cut to an alarming extent. Cotton spinning is going along at a good rate on lease-lend operations and additional spindle activity seems certain. Increased supplies of wastes are inevitable, especially in comber owing to government requisitions on combed yarns.

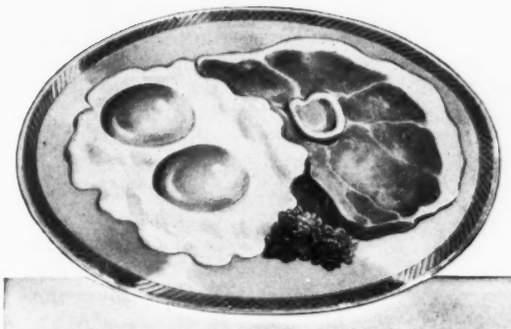
Wastes have sold at much higher prices during the year than now prevail, but the position was more or less artificial and it was not until around the end of the first quarter that a basis for wastes was established by OPA. The market now is in a thoroughly sound condition. Large supplies are taken for granted and discounted.

Output of waste is closely connected with the cotton use, but at this time and for several months past the government demand for combed yarns has led to a more than normal production of comber as related to the quantity of cotton going through the mills. Early in the New Year, some government demand for comber for mattresses is expected by one or two dealers here with Washington connections.

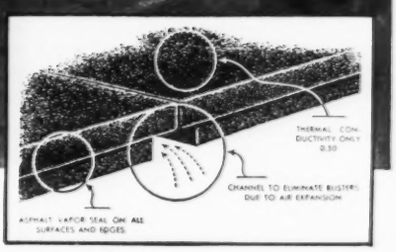
Cotton wastes are in a slow routine market and the usual dealer comments hardly go beyond "nothing much doing but prices are satisfactory". Woolen mills have been nibbling a little of late, showing some interest in peeler spinner and peeler comber but their taking of comber would not be much of a factor in reducing the large supplies available. Developments however are expected from this source. More attention is being paid in New York to manipulated wool fabrics in which peeler strips and comber might be used along with new wool in goods of the woolen order.

Traders in waste report a dull market with consumer buying still very definitely a filling-in proposition. There seems little likelihood of a rise in market value and of this consumers are well aware. They feel they can come into the market at any time and get what they want without paying any more. Strip stocks are moving in fair quantity, all types being taken with the peeler strip in sufficient variations of quality to allow a range of 2.00 cents per pound between the low and the high grade offerings. Upland strip is in fair call and here again there is a difference of 1.50 cents, giving sufficient latitude to the prospective buyer. Batting and bedding stocks are quite firm though much less active.

The consumption of cotton is moving at a great rate and spindle activity is at the high of the year but the point to be noticed is that the immense demand for combed yarns by the government is leading to much more than the normal output of comber as related to the cotton going through the mills. Supplies continue to back up into heavy accumulations with the demand still out of all relation to the output.



THEY BELONG TOGETHER —LIKE HAM AND EGGS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ASPHALT VAPOR SEAL ON ALL SURFACES AND EDGES

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CENTRALIZED responsibility avoids "buck-passing." When your roof insulation and built-up roof are both the products of the same reliable manufacturer, you avoid possibilities which make for trouble. That's why so many big plants use Celotex Vapor-seal Roof Insulation together with Celotex Built-Up Roofs.

Celotex Bonded Built-Up Roofs are available with ten, fifteen, or twenty-year bond. Celotex Vapor-seal Roof Insulation offers a thermal conductivity of 0.30, offset edges all around each board that build channels which eliminate trapped air, reduce possibilities of roof buckling and blistering.

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Taylor and Warren Transferred by G. E. Lamp Department

GEORGE J. TAYLOR, lighting engineer of General Electric Company, Nela Park, Cleveland, Ohio, has been promoted to the post of wartime lighting engineer at the company's Atlantic Division, New York City. He will work with the many government war production authorities recently transferred from the New York-Newark area. Mr. Taylor is widely known in the electrical as well as the industrial world, and is the author of a number of articles on textile mill lighting that have appeared in COTTON. DEAN M. WARREN, in charge of technical publicity of the Nela Park division, has been transferred to the company's empire division at Buffalo, N. Y., and will devote his full time to wartime lighting of industries in the Buffalo area.

Mr. Taylor

Mr. Warren

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New ALBA Officers

The American Leather Belting Association, at its annual meeting on December 4, elected the following officers: President, Roy C. Moore of Charles A. Schieren Co.; vice-president, George L. Abbott of Graton & Knight Co.; treasurer, Arthur H. Rahmann, George Rahmann & Company.

New members elected to the board of directors were: C. Carter Bond, Charles Bond Co.; Roy C. Moore, Charles A. Schieren Co.; and Frank F. Ranlville, F. Ranlville Company. Members who remained on the board and who will carry through the year are: George L. Abbott, Graton & Knight Co.; Edward H. Ball, Chicago Belting Co.; P. J. Slowey, Holyoke Belting Co.; A. E. Carpenter, E. F. Houghton & Co.; and W. T. Bell, Page Belting Company. The headquarters office will be maintained at 53 Park Row, New York City. E. R. Rath is the secretary.

◆

Manual on Wage Stabilization

A manual for employers, personnel directors and labor relations men on how to apply the new Wage Stabilization Act has just been released by the Labor Relations Institute, 1775 Broadway, New York City. The handbook, "Practical Questions and Answers on Wage Stabilization" is the second in a series of Labor Relations publications resulting from surveys on current employer-employee problems conducted by the Institute's field staff. The current report is a compilation of the wage stabilization questions which are proving most troublesome to management executives. Details of the kind of raises which may be given as well as the types of increases which have been disallowed by the new orders are included. Copies are available from the Labor Relations Institute, without charge.

◆

Book on Collective Bargaining in Rhode Island Mills

"The Background and Recent Status of Collective Bargaining in the Cotton Industry in Rhode Island" is the title of a dissertation by Rev. Edmund J. Brock, published by the Catholic University of America Press, Washington, D. C. In discussing the subject of his dissertation, the author has compiled an impressive record of the cotton-textile industry generally, with specific reference to the State of Rhode Island and bearing on the subject of the dissertation. Particularly interesting is his chapter devoted to a discussion of the structure and administration of the principal unions in the textile industry and a review of the subject of collective bargaining in various branches of cotton textiles.

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Sandoz Promotes York

DAVID E. YORK, formerly of the Sandoz Chemical Co., has joined the staff of the Warwick Chemical Co., West Warwick, R. I., as director of application research. He is a graduate of the New Bedford Textile School, and was previously with the U. S. Finishing Co. He has been technical demonstrator for Sandoz Chemical Co., in the Charlotte (N. C.) area for the past two years.

Mr. York

◆

Survey on Waterproofing

Recent developments in the production of waterproof and water-repellent fabrics for military and civilian use are described in a survey just issued as Supplement No. 2 to *Textile Research*, official publication of The Textile Research Institute, Inc., 10 East 40th St., New York City, and The Textile Foundation. The report states that the present emergency has made it necessary for many mills to apply proofing treatments to textiles and that the shortage of certain chemicals frequently used for the purpose has made the problem more difficult.

It then lists the available materials suitable for rendering fabrics waterproof and water-repellent, outlines various methods of application, and discusses the principal tests to which proofed fabrics are subjected. An important part of the report is a bibliography containing over 100 references.

Research workers and technicians whose work is associated with the treatment of textiles to render them waterproof or water-repellent may secure copies of the survey from The Textile Research Institute.

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Blanchard Talks to Mechanical Engineers

The organization of textile research for war was the theme of an address by F. S. Blanchard, president of Textile Research Institute, before the textile division of the American Society of Mechanical Engineers at its meeting in New York in December. Mr. Blanchard mentioned the prompt action, after Pearl Harbor, on the part of the government to conserve raw materials and the immediate effect upon the textile industry. The finding of substitutes and the development of textiles to meet the varied requirements of world warfare presented thousands of new problems. Mr. Blanchard mentioned the more important research organizations and foundations within the industry as well as those within the government, and in the various branches of the armed services. He described the relationship and work of The Textile Foundation and Textile Research Institute and the formation under the auspices of the latter organization of the Textile Research War Council, and outlined some of the specific work being engaged in by the Institute, as reviewed in the report of the Institute's meeting in the December issue of COTTON.

"We in the textile industry", said Mr. Blanchard, "undoubtedly will face the severe competition of other industries after the war, including that of the paper industry, to a degree greater than many of us may now realize. If we are to hold and develop our position in American industry, it is up to us to unite in the support of textile research, as the paper industry has backed up its splendid Institute of Paper Chemistry, and as the gas industry is backing its recently organized Institute of Gas Technology."

What About Your Identity

AFTER THE WAR?

EACH day brings Victory nearer. "Too late with too little" can apply to peace as well as war. Even while the battle rages, today must be our day of preparedness for that inevitable new era when once again the market place becomes the arena.

Mindful of the lessons learned from the past, mindful of new materials, new processes, more efficient machinery, you are looking ahead to the styling, the construction, the manufacture of your new peacetime merchandise. But, do not overlook the importance of protecting your identity.

Textile marking for the protection of the consumer is a matter of law. But relatively few textile manufacturers mark merchandise for protecting their own good names, for insuring their present and future distributing channels, for building reputation.

For over forty years, Kaumagraph has specialized on Identification for the textile trades. The knowledge gained through all these years, during prosperity and depression, during and after World War I, during the present emergency, is at your disposal. Our own research laboratories have always anticipated the needs of tomorrow. They will not fail you now.

Why not ask us to send a Kaumagraph Identification man for a discussion anticipating post-war needs?

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What the Textile Mills Are Doing

Commodity Credit Corp., Washington, D. C., and 208 South LaSalle St., Chicago, Ill., a Federal agency, has made preliminary plans for the construction of four hemp mills in Indiana, in Clinton, Huntington, Jasper and Elkhart counties; and for a fifth at Fort Dodge, Iowa. These are the first of 15 such plants scheduled for construction. Financing will be provided by Defense Plant Corp.

Draper Corp., Hopedale, Mass., recently purchased the vacant mill at Guilford, Maine, formerly the Pisquataquis Woolen Co., and are making alterations adapting it to the production of rough blanks for the company's bobbin plant at Beebe River, N. H.

Cheney Brothers, Manchester, Conn., are converting a number of dwellings in the vicinity of the mill into rooming houses for women operatives at its subsidiary plant, Pioneer Parachute Co., which utilizes cloth produced in the Cheney company's mills.

Artloom Corp., Philadelphia, Pa., has converted about 90 per cent of the equipment in its rug and pile divisions to the manufacture of army duck, and is planning still larger capacity in this line, with further changes in mill machinery.

Haverhill Stitching Co., 40 Walnut St., Haverhill, Mass., has been chartered to operate a converting mill for textile products, handling contract work. Edward W. Roberts, Newton, N. H., is treasurer.

Metire Knitting Mills, Inc., Ridgewood, N. Y., have concluded arrangements for the purchase of mill property previously occupied under lease, and will develop it for permanent occupancy.

Ashland Knitting Mills, Ashland, Pa., have converted much of the plant equipment to the manufacture of underwear for the armed forces, in addition to the manufacture of children's lightweight underwear.

Pacific Mills, Lawrence, Mass., have converted one of their power plants from oil to coal fuel, with the installation of stokers, coal and ash-handling machinery, and auxiliary equipment.

Leon-Ferenbach Silk Co., Johnson City, Tenn., operating a rayon throwing mill, has approved plans for a one-story addition, to be used for expansion in the spinning department.

Ontario Dyeing Co., Inc., have sold at auction all of the machinery and equipment in their plant at Rorer and Ontario Sts., Philadelphia, Pa.

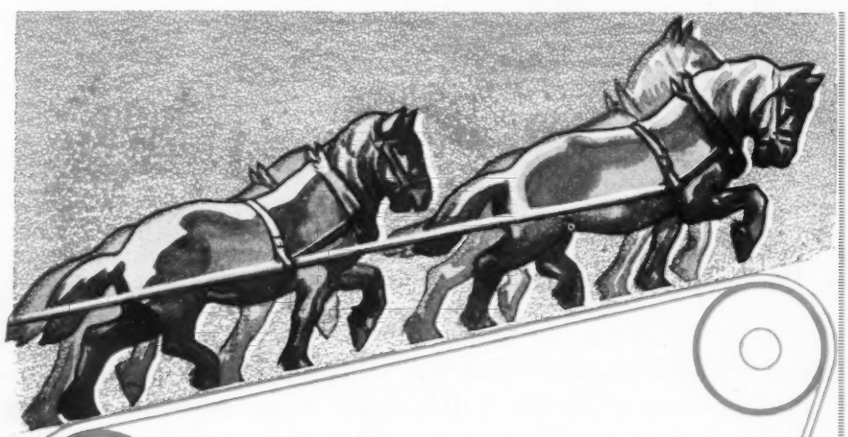
Asbestos Textile Co., Inc., North Brookfield, Mass., has purchased the plant formerly occupied by H. H. Brown Shoe Co.

Lonsdale Co. has sold its Ann & Hope Mill, Cumberland, R. I.; the plant, which has been idle for several years, will be torn down.

Seneca Knitting Mills, Seneca Falls, N. Y., will operate a branch plant to manufacture wool hosiery in part of the former Oswego Rayon Mills, Oswego, N. Y.

Willimantic Silk, Inc., Windham, Conn., has filed notice of change in company name to Willimantic Fabrics, Inc.

Draper Knitting Mills, Inc., New York City, have been chartered to operate a plant for the manufacture of outerwear.



THE *BRIDGE* FROM RAW POWER TO MACHINES

The "bridge" which transmits raw power to the requirements of your machines is leather belting. Obviously, therefore, leather belting is *important*. For, on it depends your production.

Here at Schieren's, we offer you 75 years of knowing how to make leather belting. We know how to take the best portions of hides . . . fit them together exactly . . . scour them so that no grit or foreign matter can cut into the fibres. We know how to build those fibres so that Schieren Belts grip your pulleys tenaciously! We remove the natural stretch and offer you—Schieren's Leather Belting which is guaranteed to deliver more power at less cost—year after year. CHAS. A. SCHIEREN COMPANY, 30 Ferry St., New York, New York.

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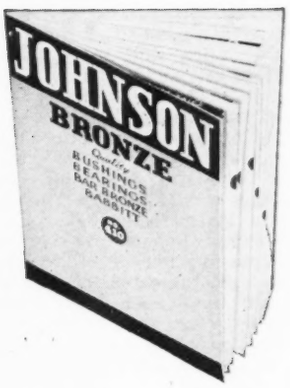


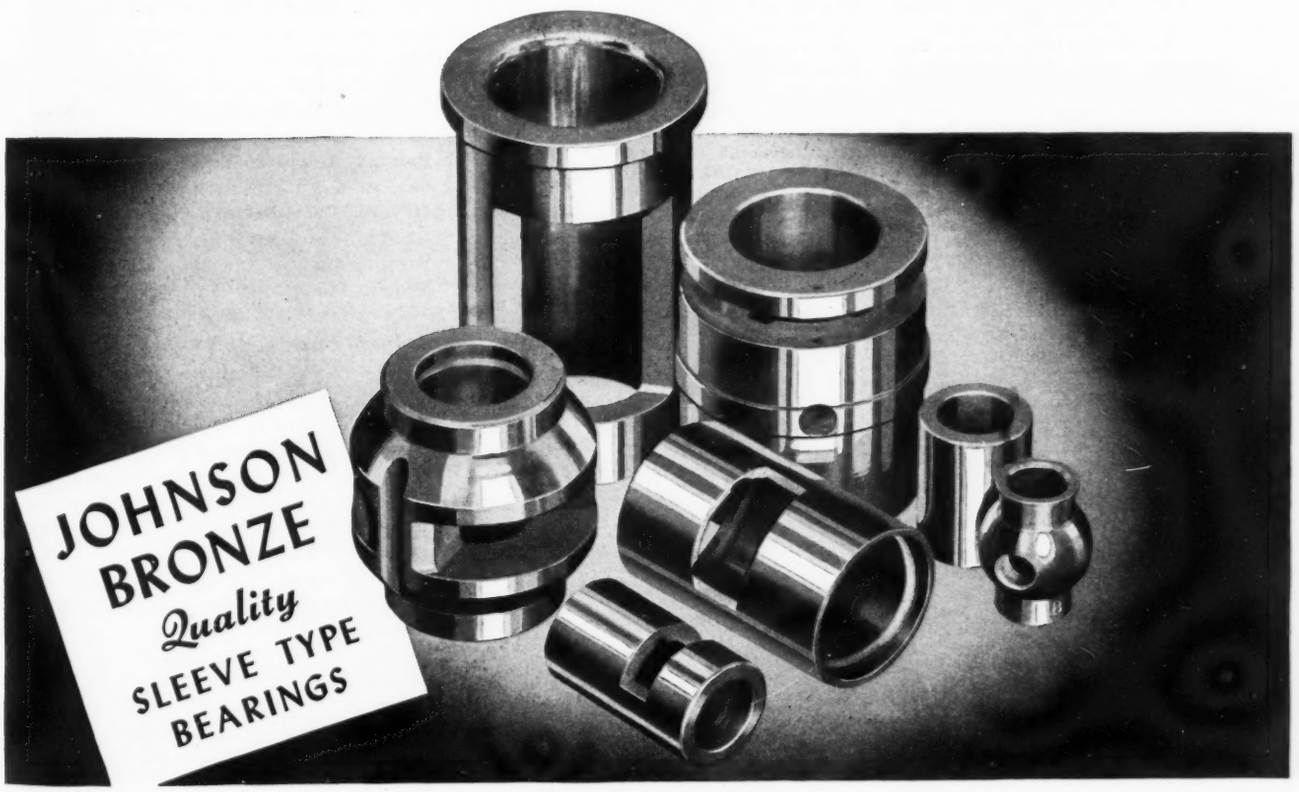
Replace

Manufacturers of armament can secure replacement bearings with a minimum of delay. Write for our new catalogue. It's free.

Most bearing failures are due either to improper fit or neglect. Proper care and attention will enable you to secure many additional hours of excellent service. In times like the present, it's a manufacturer's duty to keep every machine running at full capacity. Few parts carry the same responsibility as bearings. Why not follow these easy steps to insure the maximum service from each bearing?

Adopt a regular period of inspection. Make certain that every bearing is in perfect alignment. Keep the bearings clean. Take steps to avoid foreign matter of a gritty or abrasive nature from reaching the bearing. Lubricate at regular periods depending on the operating schedule. Make certain the lubrication is the correct grade and that it is clean.

If you will follow these instructions, you will find that Johnson sleeve type bearings will usually outlast the unit in which they are installed. Johnson Bronze Co., 530 South Mill St., New Castle, Penna.



COMMENT on the COTTON MARKET

New Orleans, December 16, 1942

THE PRINCIPAL feature of the cotton market during the past month was the rise in the nears and decline in the distant months. The advance in the nears was due to large hedge interest in December, tightness of spots, rumors that some firms would demand delivery on their December holdings, and small tenders on that month. The distant months declined owing to talk of a possible early peace or at least peace before the next crop comes to market. The distant months advanced after peace talk began to fade and are now about a dollar a bale below quotations which prevailed a month ago. The nears, especially December, are higher with December up over two dollars a bale. That month went out quietly on the 16th without much decline from the highs. Spots made a new high for the season when Middling 15/16-inch was quoted at 19.63 on December 10 and are not much under that level as this is written.

The government's final estimate of the crop had little or no effect on the market though the estimate was reduced 347,000 bales from the November prediction. At one time (September 1) the government estimated the crop at 14,028,000. Its final estimate is for a yield of 12,982,000 bales of 500 pounds, or between 12,750,000 and 12,800,000 running bales. The Census Bureau reported ginnings to December 1 totalling 11,539,420 running bales.

The market was disturbed at times by the rumors which came out of Washington but developments there, on the whole, tended to sustain bullish sentiment. Congress adjourned on the 17th without final action on the Pace bill, the object of which is to revise the parity formula so as to include farm wages. It is claimed that such a revision will raise parity 10 to 12 per cent. The November parity is 19.22. The Pace bill was passed by the House but hung up in the Senate owing to opposition of Administration leaders. The new Congress meets on January 6, when the Pace bill is certain to be revised and passed by both houses. Farm Bloc members, who have been joined by a large number of the newly elected Republicans, seem to be in the saddle in both the House and Senate and are believed certain to enact legislation which will force the Department of Agriculture to include farm wages in its parity formula despite the objection of the president and officials of the Department of Agriculture. It is claimed that two-thirds of the Senate will vote with the Farm Bloc on this matter and that the Pace bill will be attached as a rider to a bill which the President cannot veto if it becomes necessary.

Leaders of the Republicans as well as Farm Bloc members and heads of various farm organizations are up in arms against methods pursued by the OPA and other government agencies in fixing price ceilings on farm products. Legislation to curb the activities of these agencies in fixing prices and rationing quotas appears certain of enactment by the New Congress. One proposal is for a court of review to which objectors to orders of the OPA can appeal.

The effect of these measures, if enacted into law, will be, it is claimed, to raise parities and also to raise the general level of prices for all agricultural products on which the OPA is authorized to fix ceilings. The November parity of 19.22 is the highest since 1930.

In the referendum of December 12 86.4 per cent of the farmers participating voted for continuation of marketing quotas in 1943. In 1941 the vote was 94 per cent. Under the AAA Act the Secretary of Agriculture could not ask farmers to vote for an acreage less than 27,400,000. However, prior to the vote the Secretary fixed the crop which could be raised and marketed without penalties at 10,000,000 bales. Since an announcement of the vote the Secretary has stated that the 1943 acreage will be 94 per cent of the 1942 planted area of 24,000,000, or 22,500,000. The order has reduced the amount of land which planters of short staples can put into cotton and increased the amount which raisers of long staples can plant by 15 per cent. The increase in long staple acreage is estimated at 1,844,000.

The movement of cotton into the loan continues heavy. Loans on the 1942 crop reported to December 5 total 1,216,056 and withdrawals 4,024. Farmers have so far obtained loans on only 756 bales stored on their farms. The expectation is that between 2,500,000 and 3,000,000 bales will go into the loan. These loans act as a floor under the market and will be continued for 3 years after the war. The vote of farmers on the 12th assures loans at 90 per cent of parity.

While the law permits the CCC to sell 1,500,000 bales a year of its stocks, at the rate of 300,000 a month there appears to be little probability of early sales. Mr. Hutson, head of the CCC, is quoted as saying that it may not be necessary to sell any of its cotton next year as the 1942 crop seems to be ample for all trade demands.

Demand for spots from mills is light due to large stocks. Farmers offerings are also light and daily sales small. This means small hedges. The hedge interest in March is very large.

The Census Report for November showed consumption of 913,038 bales. The daily rate indicates that consumption would have been over 1,000,000 bales except for the holidays. Mill stocks are given as 2,440,684. Details of the Census Report will be found in another column.

CENSUS REPORT OF COTTON CONSUMED AND STOCKS

Consumption of Lint Bales—	This Season	Last Season
In United States, November	913,038	849,143
In United States, October	972,490	955,657
In United States, 4 months	3,776,766	3,554,806
In Cotton Growing States, November	972,123	727,095
In Cotton Growing States, 4 months	3,269,695	3,023,253
In New England States, November	95,411	98,020
In New England States, 4 months	403,327	419,395
In All Other States, November	25,504	24,028
In All Other States, 4 months	103,747	112,158
Mill Stocks		
In United States, November	2,440,684	2,248,280
In United States, October	2,117,902	1,993,593
In Cotton Growing States, November	2,060,083	1,869,031
In New England States, November	314,099	319,463
In All Other States, November	66,302	59,786
Warehouse Stocks		
In United States, November	13,637,120	13,959,627
In United States, October	12,674,414	13,318,190
In Cotton Growing States, November	13,340,408	13,596,578
In New England States, November	280,638	345,053
In All Other States, November	16,074	17,994
Active Cotton Spindles		
In United States, November	22,948,248	23,079,000
In United States, October	23,012,046	23,054,236
In Cotton Growing States, November	17,423,826	17,423,544
In New England States, November	4,903,596	5,010,740
In All Other States, November	620,826	644,716

Mrs. W. G. Hamner Operates Sales Agency

Mrs. W. G. Hamner, Box 267, Gastonia, N. C., is operating the sales representative business managed by the late Mr. Hamner for the past 17 years. The list of accounts represented by Mrs. Hamner follows:

Gill Leather Co., Salem, Mass.; New England Bobbin & Shuttle Co., Nashua, N. H.; Carolina Container Co., High Point, N. C.: Powe Veneering Co., Camden, S. C.; B. Snowiss Fur Co., Lock Haven, Pa.; Better Packages, Inc., Shelton, Conn.; Edward H. Best & Co., Boston, Mass.; and Lummus Cotton Gin Co., Columbus, Ga.

Solvay Builds Plant in North Carolina

Solvay Process Co., Syracuse, N. Y., are constructing at Kings Mountain, N. C., a large plant to produce spodumene concentrates and by-products from the spodumene-bearing rock found in that vicinity. Spodumene is the chief source of lithium, a rather uncommon alkali metal. The company, which manufactures alkalies, maintains a branch sales office at 212 South Tryon Street, Charlotte, N. C., in charge of H. O. Pierce, branch manager. H. N. Cole, of Syracuse, has been assigned as resident engineer on the new development at Kings Mountain.

No other Synthetic Cot gives you all these advantages

1. **Good Coefficient of Friction**—Less eyebrowing than with other synthetic cots.
2. **Ready-glued**—Inner surface coated with water-soluble glue for quicker assembly.
3. **Resilience**—Nonthermoplastic, highly resistant to flattening; aids quick start-up.
4. **Durability**—Long life, resistance to grooving even under severe operating conditions.
5. **Solvent-Resistance** — Unaffected by oil, water, dyes, or solvents used in textile mills.
6. **Uniformity**—Homogeneous composition assures uniform wear, equal life of every cot.
7. **Seamless**—No surface irregularities; no troublesome seams to open and shorten life.

Where operating conditions are unusually severe, Accotex Cots prove their exceptional wearing qualities. Moreover, you can rebuff these rubber-like synthetic cots several times for extra service. Because they are extremely tough, and solvent-resistant, Accotex Cots are recommended especially for use (1) on frames spinning coarse numbers, particularly frames equipped with revolving clearers; (2) on back line rolls of long draft roving and drawing frames; (3) on wet twisting equipment.

Before you choose heavy-duty cots, consider *all seven* advantages of Accotex Cots. You'll find these cots best for heavy-duty jobs. If you have a roll covering problem, be sure to consult your Armstrong representative. Or write direct to Armstrong Cork Company, Textile Products Section, 3601 Arch Street, Lancaster, Pennsylvania.

ARMSTRONG'S ACCOTEX COTS

CORK COTS • ACCOTEX APRONS

NEW EQUIPMENT and MATERIALS

Oil Window Unit for Oil-Level Visibility

Bijur Lubricating Corp., Long Island City, N. Y., have announced an oil window unit, as a new pre-assembly, especially devised for the convenient indicating of oil level when the unit is installed in a "built-in" oil-reservoir casting. The unit consists essentially of a window of clear plastic assembled in a polished metal housing. A special oil-proof synthetic gasket insures oil-tightness between window and frame. The bright background of the housing together with the plastic window provides sharp visibility of oil level. The unit may be pressed into a reamed hole in the machine casting, provided the casting wall thickness is ¼-inch or more. A thin coat of glyptol, shellac or other oil-proof sealing material applied to the surface of the reamed hole, immediately before inserting the oil window unit, insures making the installation oil-tight. Two holes in the metallic background give easy passage to the oil.

◆

New Aridye License

Aridye Corp., 75 Varick St., New York City, announces a new, broader license covering both pigment-printing and pigment-dyeing. This license is available not only to former licensees, but to any textile finisher interested in this new development. It covers important improvements already introduced and makes provision for the inclusion of further improvement patents from time to time.

Large government orders for camouflage strips, dyed uniform cloth and insect netting, for example, have created a rapidly expanding demand for the use of pigments, the company pointed out, and because of this unprecedented expansion of production which requires finishes of this type, the company decided to take this step. No increase has been made in the royalty rate over that of the present pigment-printing and pigment-dyeing licenses.

To date, no license has been issued to manufacture the patented pigmented emulsions which the company sells. However, with the rapid expansion of the use of these emulsions, particularly in connection with the war program, it was decided to include in the new, broader license the right to obtain the patented pigmented emulsions anywhere, if that seems necessary at any time. The finisher will of course recognize that technically correct pigmented colors and proven methods must be used in order to maintain the high standards of quality in the industry.

◆

Oil-Resin Emulsion Water Paint

Truscon Laboratories, Detroit, Mich., have introduced Opaltone, a concentrated paste paint, to be thinned with water, which dries quickly and is readily washable. It is an oil-resin emulsion wall coating which is easily applied with a roller, brush or spray. It contains no critical raw materials, and no accessories, such as linseed oil or turpentine, are necessary—only water. It requires no primer or sealer, and may be applied over a painted surface as well as over porous surfaces, concrete block, brick or plaster. There are 8 pastel shades and pure white.

◆

High Frequency Heating Equipment

The Girdler Corp., Louisville, Ky., has expanded the manufacturing facilities, research laboratories and engineering staff of its Thermex division, devoted to high frequency heating equipment. This high frequency, electrostatic heating equipment is finding increased applications in the bonding, drying and heat processing of non-conducting materials, it is pointed out. The equipment utilizes the principle of generating heat within a mass by exposing it to a high frequency field which sets up molecular friction uniformly throughout the material being treated. As a result of this "inner penetration" action, rapid uniform heating is effected regardless of the thickness of the mass exposed to the high frequency, electrostatic field.

◆

New Finishing Agent

The Hart Products Corp., 1440 Broadway, New York City, have developed "Repel-O-Cide", a new one-piece agent containing anti-mildew agents and water-repellent qualities in balanced proportions to meet government specifications. It is applied to all types of fabrics by pad, quetsch, or dyebeck, and no curing or after-treatment is required. It is applicable to all types of service fabrics, including ducks, shelter tent ducks, balloon cloth, webbing, denim barrach cloth, camouflage cloth and percales.

Forced-Convection Heaters

General Electric Company, Schenectady, N. Y., have developed forced-convection heaters for use to heat out-of-the-way places such as guard towers, watchmen's houses, etc. Controlled automatically, and rated from 2 to 15 kw., these heaters are available in the suspension type for wall and ceiling mounting. The portable type, which while intended primarily for floor mounting, is readily adaptable for either wall or ceiling use. The heaters are sturdy, economical in operation, and readily installed, since it is only necessary to connect them to the nearest outlet.

Obituary

B. F. Barnes, 56, southern sales representative of Victor Ring Traveler Co., died on December 13 at his home in Atlanta, Ga., after an illness of several weeks. Mr. Barnes, prior to his association with Victor 20 years ago, had formerly been purchasing agent of the Fulton Bag & Cotton Mills.

Charles E. Lord, one of the founders and for many years president of Aberfoyle Mfg. Co., Chester, Pa., and later president of Galey & Lord, Inc., New York City, died at 77 years of age on December 7.

Walter S. Wyman, president, Androscoggin Mills, Bates Mfg. Co., and Hill Mfg. Co., Lewiston, Maine, and Edwards Mfg. Co., Augusta, Maine, died on December 14.

Hugh Beveridge, 73, father of Henry G. Beveridge, owner and manager of the Beveridge Re-Needling Co., Gastonia, N. C., died at his home in New Bedford, Mass., late in November.

Emil A. Untersee, 54, well-known General Electric Co. textile engineer, died suddenly at Schenectady, N. Y., in November.

Edward P. Bosson, president and treasurer of Bosson & Lane, Inc., North Quincy, Mass., died December 13 at the age of 78.

August Nordman, 59, passed away in November. He was president of Finer Full-Fashioned Hosiery Mills, Charlotte, N. C.

George Woods, for many years boss printer at the Glasgo (Conn.) Finishing Co., died on December 2.

Fred Batcheller, 81, formerly purchasing agent of Pacific Mills, died recently in Deland, Fla.

C. V. Truitt, 81, retired cotton manufacturer of LaBrange, Ga., died in November.

AT

PIEDMONT SHIRT CO., TOO —NORTHERN HARD Maple

New plant of the Piedmont Shirt Co., Greenville, S. C.—floored with **MFMA** *Northern Hard Maple.*

"Takes on a Smoother Appearance with use"

says

H. S. ABRAMS, Supt.

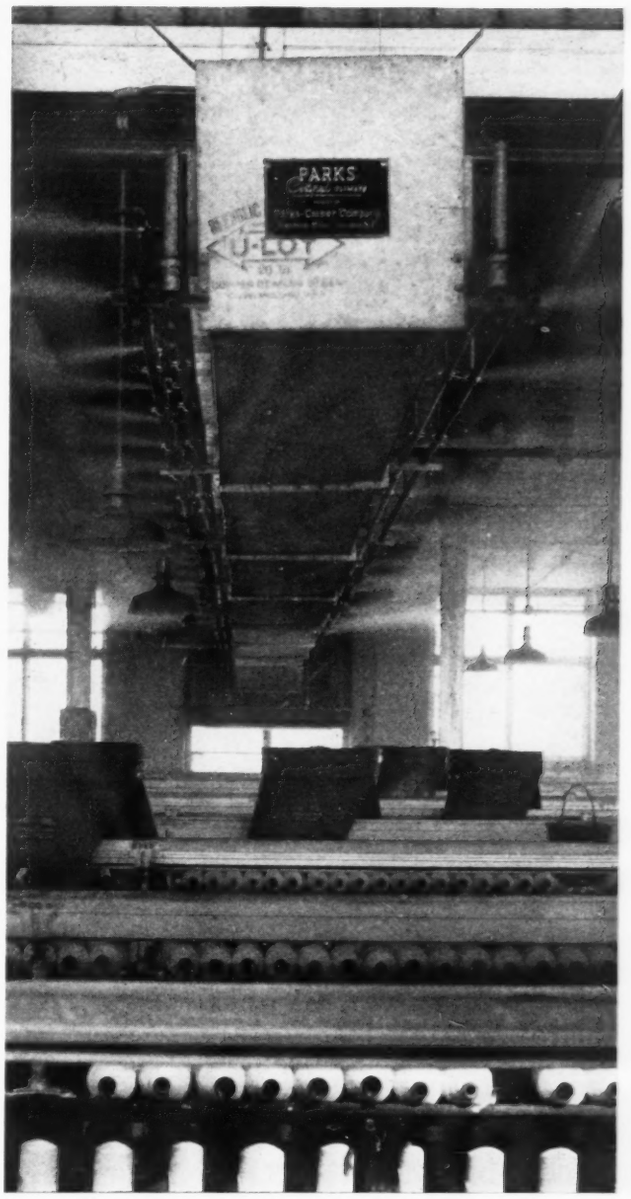
"Since flooring our building (the home of nationally-advertised Wings Shirts) we wish to express our deepest satisfaction with the Northern Maple stock which we used," says Mr. H. S. Abrams. . . . "We have noticed from month to month that the flooring takes on a better and smoother appearance with use. We are particularly pleased with the hardness of the floor and the fact that there is no possible chance of it splintering. This was a constant source of trouble to us in our old building."

In mills everywhere, Hard Maple's daily satisfaction and eventual economy have been proved through the years. When you build, remodel, or re-floor, don't fail to investigate **MFMA** (trademarked, guaranteed) Northern Hard Maple. *Ask your architect.*

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Illinois

Write for folder on heavy-duty finishes for old or new Maple floors, which further reduce cleaning costs. See Sweet's, Sec. 11/57.

Floor *with*
MFMA Maple
REG. U. S. PAT. OFF.
(NORTHERN HARD)



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smoother, more compact drafting; less waste and fly; higher and more dependable regains; greater strength with much more uniformity of numbers.

fewer stops; fewer adjustments; fewer piecings; fewer seconds; and more acceptable working temperatures as a by-product.

Parks-Cramer Company

Fitchburg, Mass. Charlotte, N. C.

PERSONAL NOTES
About Men You Know

The following promotions were made in December in the manufacturing department of Callaway Mills, operating plants in LaGrange, Manchester, and Milstead, Ga. The positions to which these men were promoted relate to the entire group of mills.

J. H. DAUGHDRILL, from vice-president and general superintendent to vice-president in charge of manufacturing. A. U. PRIESTER, JR., from technical superintendent Hillside plant to general superintendent. W. B. HILL, from superintendent Unity plant to chief technical engineer. J. D. TALBERT, from office manager Unity Spinning-Oakleaf plants to chief staff engineer.

Mr. Priester

Mr. Daughdrill

E. O. DEFORE, from chief testing engineer to superintendent Unity plant. W. P. COFIELD, JR., from testing supervisor to chief testing engineer. R. F. REDDING, from chairman standards committee to chief control engineer. A. ELIAS, from overseer shipping Elm City plant to control engineer. D. O. BRYANT, from overseer of weaving and twisting, Unity plant, to control engineer. T. R. PULLEN, from testing department to control engineer.

E. F. PARKER, who has been executive assistant to the general superintendent is now chief cost analyst. JOE HINDS was transferred from standards committee to control engineer. S. P. RICE was transferred from standards committee to control engineer.

E. E. ROUTH has been elected vice-president and director of sales of The Mathieson Alkali Works, Inc., 60 East 42nd St., New York City, succeeding JOHN A. KIENLE, retired. Mr. Routh has spent his entire business life with the company, serving as southern sales manager from 1920 to 1928, and general manager of sales from 1928 to date. ROBERT J. QUINN has become assistant to Mr. Routh, and D. W. DRUMMOND has been appointed general manager of sales.

THOMAS H. JOHNSON, for the past 12 years with American Bemberg Corp., has become associated with the American Viscose Corp., as a member of the viscose sales division of the company's New York sales office. Mr. Johnson joined the American Bemberg Corp. in 1931 as a knitting technician. In 1938 he was named southern sales representative and in 1939 was appointed assistant to the sales manager.

THOMAS H. NELSON, textile sales representative of Penick & Ford, Ltd., Inc., has become a first lieutenant in infantry and reported for duty in December at Camp Wheeler, Macon, Ga. He is the son of THOMAS NELSON, dean of the textile school at N. C. State College, Raleigh, N. C.

DR. ROY A. SHIVE, of the Calco Chemical Division of American Cyanamid Co., Bound Brook, N. J., has been called to Washington by the Rubber Reserve Company to supervise production and development of chemicals for synthetic rubber.

ALAN B. SIBLEY has been made treasurer of Abbeville (S. C.) Mills succeeding F. S. NICHOLAS, now in the U. S. Navy. Mr. Sibley is also treasurer and general manager of Judson Mills, Greenville, S. C., and the Laurens (S. C.) Cotton Mills.

LOUIS STETTAUER, for the past year with the Velveray Corp., with main office in New York City and plants in Fall River, Mass., and Clifton, N. J., has been elected vice-president. He was formerly a member of the converting firm of Stettauer, Harris & Raphael.

WILLIAM H. DANAGHEY, for 20 years superintendent of Lees Textile Co., Lowell, Mass., has been given a leave of absence and is now an inspector of textile products in New England for the U. S. government.

NORMAN CHADWICK, formerly superintendent of Middlesex Worsted Spinning Co., Lowell, Mass., a division of Suffolk Knitting Co., is now superintendent of Armory Worsted Mills, Manchester, N. H.

R. H. TUTTLE, superintendent of the Karastan Mills of Marshall Field & Co., at Leaksville, N. C., has been transferred to the company's personnel department, and VIRGIL HALL has succeeded him at Karastan.

S. L. STACK has resigned as superintendent of the Father George Mill, Sanford, N. C., to become general manager of the Winton Mills, Fort Valley, Ga., and G. & B. Yarn Mill, Cottondale, Ala.

C. E. DAVIS, JR., has resigned as overseer of spinning at the Cedartown (Ga.) Yarn Mills, to become overseer of spinning at the LaFayette (Ga.) Cotton Mills.

RICHARD J. REYNOLDS, formerly superintendent of Housatonic Dyeing & Printing Co., Derby, Conn., is now general manager of Sussex Dye & Print Works, Inc., Newton, N. J.

ERB N. DITTON, technician for Gotham Hosiery Co., Inc., New York City, is now a private in the army, stationed at Camp Dix, N. J.

E. L. DALE, formerly sales manager, Aberfoyle Mfg. Co., is now vice-president and sales manager of Sauquoit Silk Co., Inc., Philadelphia, Pa.

TUCKER MCCRAVY has become purchasing agent for the southern plants of Pacific Mills, with headquarters at Lyman, S. C.

HENRY E. LITTLEJOHN has become superintendent at S. Slater & Sons, Inc., Slater, S. C.

J. L. ANDERSON has become superintendent of the H. C. Townsend Cotton Mill, Anderson, S. C.

EDMUND RIGBY was last month elected assistant treasurer of Hathaway Mfg. Company, New Bedford, Mass.

JOSEPH FRIEDLAND has resigned as superintendent of the Gotham Hosiery Co., Philadelphia, Pa.

Textile Men in Controllers Institute

Four executives in the textile field have been elected to active membership in the Controllers Institute of America, 1 East 42nd Street, New York City, a technical and professional organization of controllers, devoted to improvement of controllership procedure. They are: Edward S. Alden, treasurer of the Whitin Machine Works, Whitinsville, Mass.; Emil R. Dahlson, secretary-treasurer, California Cotton Oil Corporation, Los Angeles; Edward C. Hunt, controller of Warwick Mills, Boston; and P. E. Roper, treasurer and controller of the Landers Corporation, Toledo.

Better Way to Move War Goods

THE Barber-Colman system of Spooling and Warping embodies a number of features which are contributing materially toward better results in the war effort. Most of these have to do with efficient handling of materials and with conservation of the operator's energy. For instance, the picture shows the trident transfer table, located between the Automatic Spooler and the Super-Speed Warper. Cheeses from the spooler are placed on tridents which are then slid onto the roller-top transfer table by an easy push. No heavy lifting is necessary and the material is moved quickly with a minimum of effort. Other features include convenient bobbin storage bins, easy-running trident trucks, handy arrangements for creeling, self-threading drop wires, and a special comb to speed up creeling-in time. With a premium on the efficient production of war goods, mills having Barber-Colman equipment are fortunately situated to keep up with high standards of quality and large volume demands.

For Example . . .

The following production figures show results being obtained in a prominent mill running medium counts for two-ply twills used in uniforms and other similar military cotton goods.

Count	20s
Ring	2¼"
Traverse	7¾"
Pounds per hour per Spooler	490
Beams per Cheese	2
Yards per Beam	20,000

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • TWISTER CREELS • MOISTURE CONTENT CONTROLS

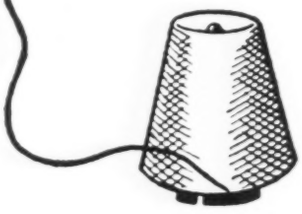
BARBER-COLMAN COMPANY

ROCKFORD, ILLINOIS, U. S. A.

FRAMINGHAM, MASS., U. S. A. • GREENVILLE, S. C., U. S. A. • MANCHESTER, ENGLAND • MUNICH, GERMANY

BURK-SCHIER

WET
PROCESSING
AGENTS FOR
YARNS AND
PIECE GOODS



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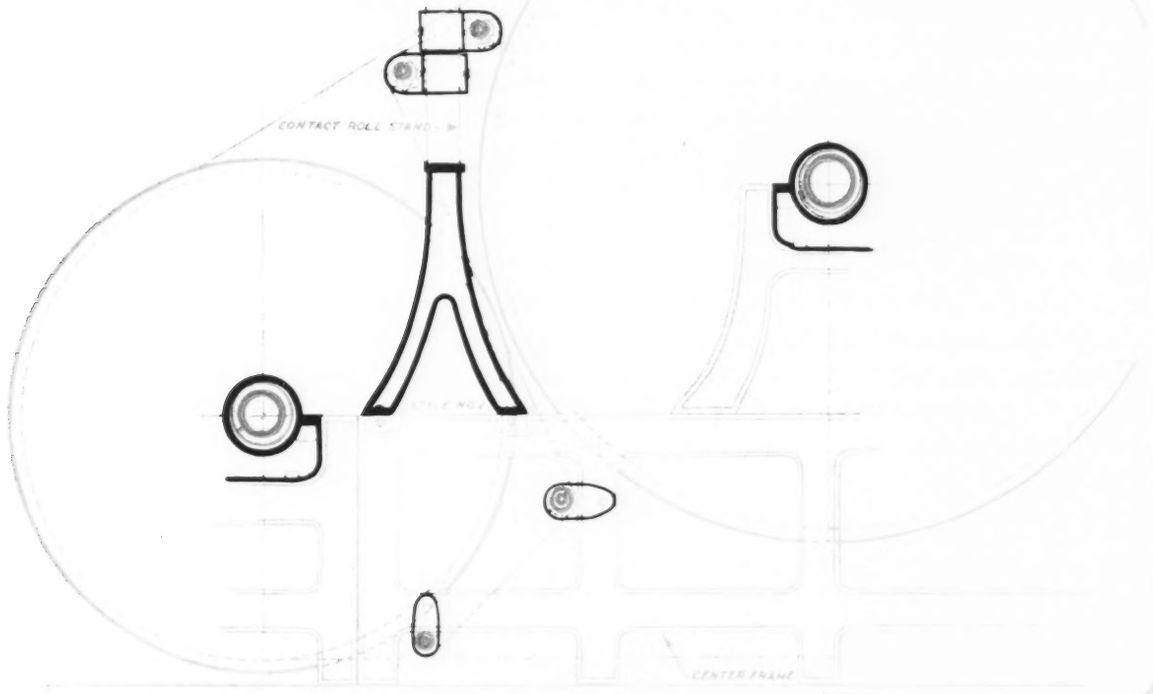

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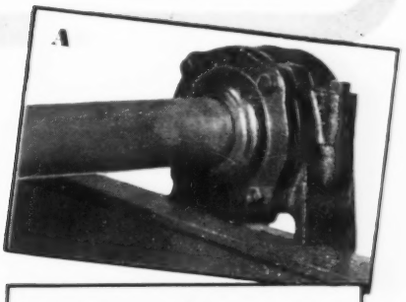

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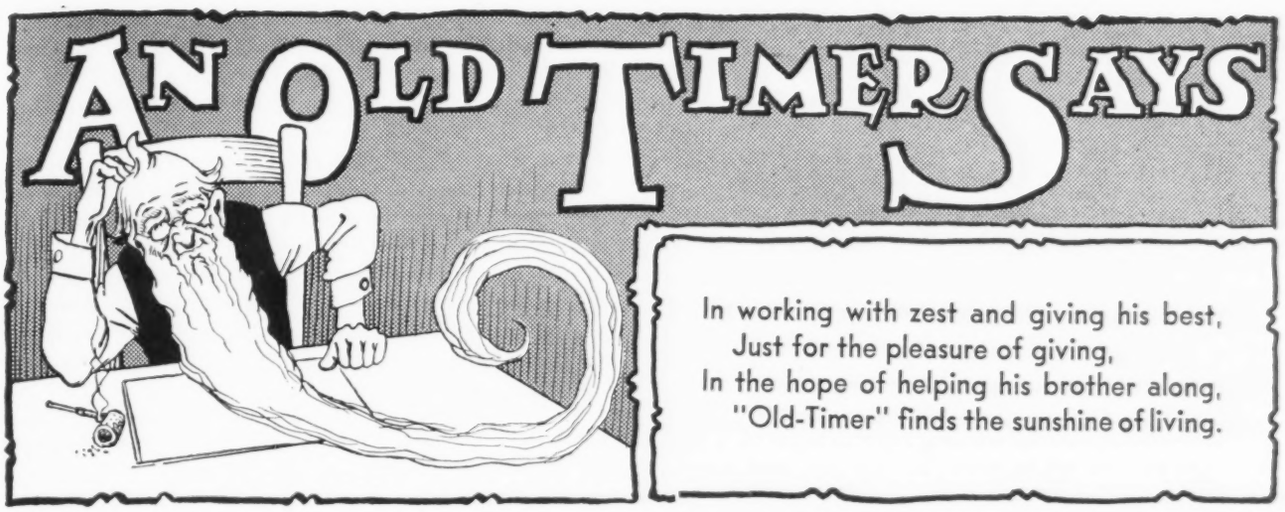
AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

Personality

DO YOU OLD-TIMER readers remember the article we had on the subject of personality some time ago? Well, here we go again in an effort to drive the thought home to you, to get you to realize how vitally important it is that you can and should improve your personality.

It is generally considered that personality is one of the greatest assets a man can possess, regardless of what profession he follows. Next to knowledge, personality more than any other quality enables a man to progress in his profession. Of course, without knowledge personality would be greatly handicapped, but since human relations and collective bargaining have come into the picture, dealing with people is now the biggest problem a foreman has to face.

Dale Carnegie, who has been very successful in teaching men how to deal with people, says investigations have revealed that even in such technical lines as engineering, about 15 per cent of a man's financial success is due to his technical knowledge and about 85 per cent is due to his skill in human engineering—to personality and ability to lead people.

But even with this large margin of 85 per cent attributed to the ability to deal with people, do not lose sight of the fact that if you did not have that 15 per cent of knowledge first, there would not be any 85 per cent. Knowledge must form the foundation just like the foundation of a house. The foundation may consist of only 15 per cent of the brick which make the whole structure or 100 per cent, still without that first 15 per cent foundation you would not have much house. In the problems which confront the textile man today the man who has knowledge of manufacturing *plus* the ability to handle people, to arouse enthusiasm among men in their work—that is the man who is going to draw the big salary check.

In my contacts with mill executives for the past few years I have found that they will pay any salary within reason for men who have the ability to deal with people. Can't you see, gentlemen, that it is now even more important, yes I'll say more necessary, to make a concentrated study of every phase of the problem of how to deal with people than it was to study loom fixing, card grinding or any other phase of textile manufacturing? The first overseer's position I had was given to me because I had learned to fix looms better than the other fellow. You know, the knowledge of loom fixing, card grinding or any other knowledge of machinery alone would not get me a job today. Today we must know how to deal with people and that ability must come from a knowledge of human relations, collective bargaining, labor laws, and all other phases of the new order, so to speak. Then, with this knowledge we must have the ability to deal with people and that ability is absolutely dependent upon your personality.

Quite an amusing little incident happened many years ago while the looms were being installed by Draper Corporation in a southern plant. James Alexander, a friend of mine and incidentally the fellow who gave me considerable competition when we were running sections in the same room, was there erecting the looms. Jim was one of those fellows who always wanted to talk to the boss. So every time he would see the president, Mr. W. B. Smith Whaley, in the mill, Jim would maneuver around so he would meet Mr. Whaley in the alley in order to speak to him. Jim would say, "Good morning, Mr. Whaley".

After several weeks, evidently Mr. Whaley caught on to Jim's tactics, and Mr. Whaley used pretty big cuss words, so one morning Mr. Whaley stopped right in front of Jim and said, "Good morning, Good morning, Good morning, now, damn you, let that do you for a week."

Let me digress just a moment to explain to you that cursing is not only a very bad habit which will undoubtedly not improve your personality but it shows clearly that the man who is compelled to use cuss words to emphasize his thoughts simply does not possess the vocabulary to express those thoughts.

When dealing with people we should always keep in mind that only a few people are logical. Most people have sensitive feelings which are easily hurt and especially if you are talking to operatives or any subordinate where there is a spark of jealousy in his feelings toward you, undue criticism or criticism ex-

pressed unwisely may plant a seed of hatred which will sprout months or years later when the opportunity arises.

One man can say "Good morning" to you and you are pleased. Another man says "Good morning" and you say "Humph". That's one difference in personality. One man can say "No" and make you like it; another says "No" and you say "To hell with him". One man can instruct section men to do certain routine work not necessarily a part of their regular duties and they will gladly do it. Another man can give exactly the same orders and the section men will say "What does he think we are?" or something to that effect.

Charles Schwab was paid a million-dollar salary by Andrew Carnegie, and Schwab said he was paid that large salary because he knew how to deal with people. The most important item to arouse enthusiasm among men is encouragement and appreciation of their efforts, said Mr. Schwab.

In any foreman's work it is necessary for him to criticize when an operator does wrong, but you should criticize in such a way that you will improve the operator's work and not so it will leave a sting which will cause that operator to do wrong every time he thinks he can get by with it, as revenge against you.

Now suppose we get down to brass tacks and see if we can find ways of improving our personality. You so often hear people say *that* man was born with a pleasing personality, and that may be true to a certain extent, but it is also true that a man may acquire a pleasing personality if he will try. There is certainly nothing mysterious or intricate about acquiring a good personality. Suppose we give you a few simple illustrations in order to lead up to what we wish to say and as to how to improve your personality.

Human nature is the foundation of personality. For example, it is human nature for you to return favors. Remember that boy who gave you part of his candy or one of his apples at school? You gave him one of your apples a few weeks later, didn't you? And that friend who sent you a Christmas card is on your list to send him one next Christmas, isn't he? That's simply human nature, fellows. If you show a kindly feeling toward a man he more than likely will reciprocate in some way. If you show a man how to run his job better and go at it in a way that shows you are sincerely interested in him, he is just as sure to appreciate it as he is a human being. These illustrations are of course amateurish, I'll admit, but they most certainly have a bearing, yes, a deep bearing, on our subject Personality.

Personality can certainly be acquired, gentlemen, if you will only give it some study. The man who is born with a pleasing personality can be nasty if he wants to, but his judgment tells him that it is not good business. Probably it would not be a bad idea to get before us some of the qualities that go toward building up or improving our personalities, something to shoot at, so to speak, and as some men claim that personality is developed by mental habits and others claim it is developed by emotional habits and still others by physical habits, suppose we try to analyze all of them.

Please note that we use the word "habit" in connection with building or improving personality. That is because if you form a habit of doing something it is no longer a mental effort to do it. It is done naturally, we say, because we have formed that habit. Remember the crude illustration I made to you in a previous article about forming a habit? That I went back to see an old cow pasture I had played baseball in when I was a kid, that a holly tree stood near third base and that as the cows came up at night they had to walk around that holly tree. Now the holly tree is gone but the cows still walk around where the holly tree stood. You light your cigarette the same way you have formed the habit of lighting it; try to change and see how awkward it is, but you *can* change, can't you? You put the same arm through your coat sleeve first, don't you, but you *can* put the other arm through first, can't you? Now, if you admit you can change these simple habits I have got you right where I want you because you admit you can change your habits and I am trying to show that you can improve your personality by changing some of your habits.

Now, if you have a habit which is not conducive to a good personality you can change that, too, and that is what we are trying to show you. Study the qualities which go toward making a good personality and then change your habits to fit in with these good qualities.

Suppose we start analyzing the qualities necessary to form a good personality. Let us list them as follows:

MENTAL CHARACTERISTICS

To Acquire	To Avoid
Enthusiasm	Lying
Confidence	Egotism
Observation	Pessimism
Initiative	Stubbornness
Concentration	

That word "lying" is a pretty ugly word, but it is the first word that came to me. Probably we had better change that to the way a minister, who spent the night at my house once, described a statement by another man. He said the man "enlarged on the truth" which was a nice way of saying he was a liar. When I say to you I never made a promise to an operative in my life—that is, I never in all my work in the mill promised a weaver a certain set of looms, nor a spinner a set of sides nor a frame hand a set of frames—I will not blame you at all for thinking I have enlarged on the truth or am just a plain liar, but I will explain in some future article how I avoided making promises and incidentally avoided making enemies of many operatives.

The next heading we will list and analyze is:

EMOTIONAL HABITS

To Acquire	To Avoid
Faith	Jealousy
Respect	Selfishness
Hospitality	Passing the Buck
Honesty	
Loyalty	
Tolerance	

The next heading is:

PHYSICAL HABITS

To Acquire	To Avoid
Energy	Being Irritable
Dignity	Sour Look
Uprightness	Slouchiness
Fairness	
Equity	
Trustworthiness	
Cleanliness	
Helping Others	
Cheerfulness	

By "dignity" I do not mean the so-called blue blood dignity, but simply a gentleman's dignity. As to the "sour look", someone has said it takes about twice as many muscles in your face to produce a sour look as it does to look pleasant, so why work overtime?

We can add more to our list as we go along, and let me state in passing that those items in the column To Acquire will give you more pleasure and happiness than you can realize when you begin to try to acquire them and happiness is a very important item in the list of things that contribute to personality. Let me give you one illustration: One Christmas I was caught away from my home town and was a little blue as I walked up and down the street looking at the windows. As I approached one window I noticed two little boys looking in the window and it seemed to me they had a rather longing look on their faces, and when I got near to the window and saw all the pies, cakes and good things to eat, I realized those boys were hungry. I had only two dimes in change, so I gave each a dime and told him to go in and buy something. They did not wait to thank me in their eagerness to get into that store. That experience gave me an idea. I went to the bank and asked for two dollars worth of dimes and every time I saw a kid looking into a window I'd ease up beside him and without saying a word give him a dime and watch him run. Boy, I had a wonderful Christmas!

Personality may be acquired, fellows. It is not a complicated thing at all if you will simply apply your observations and your knowledge of human nature to *yourself*. Even an ignorant negro knows when he does wrong, he knows it is wrong to steal your chickens or watermelons the same as you know when *you* are doing the things that impair your personality. Therefore, you must avoid those things, those habits, and cultivate the habits which improve your personality.

If there is a single reader who does not have one operative in his department or mill whom he thoroughly dislikes, then you are different from all the men I have come in contact with all my life. You also have an operative (maybe several) who does not like *you*, and you know who that operative or those operatives are. To say the least, gentlemen, that condition does not speak very well for personality. There is something wrong, radically wrong, and the very fact that you are supposed to have more brains than the operatives makes the wrong necessarily fall on your shoulders. You are supposed to know more about how to work people than the operative knows. You are supposed to know that you will need that operative's respect and loyalty more than he needs yours. Remember that old adage about one rotten apple in a barrel? The operative who dislikes you may have some influence on another operative. Suppose he gets in conversation with a new operative who has come to work only this morning. What he says to the new operative will not likely help you much in your future relations with that operative. When you go to that new operative to get him to do something you already have two strikes against you caused by what that operative who dislikes you has told him. That is where personality begins to show up, fellows. Go back to our chart and look at that word stubborn. The dictionary describes it further as obstinate—not yielding an inch—not to be moved—sulky—sullen, and all the other things that show a nasty disposition and all the things which go against a good personality.

Gentlemen, let me use a concrete illustration to drive home the thought I am trying to get over. A thought which would greatly improve your ability to work people, which will strengthen your faith in the fact that you can improve your personality.

Over 20 years ago I took charge of a mill where the overseer of carding was a very close friend of the superintendent who had been let out—they fished together—they drank together, and the overseer of carding naturally resented my taking his best friend's place. The president told me I would have to discharge this overseer. He knew of the relationship which existed between the two men. To make matters worse, the carder was a much older man than I was and naturally thought he knew much more about carding than I did. Now, without going into further details, we must skip over about 15 years.

I had the misfortune to get into litigation with an unscrupulous partner which cost me over $40,000. The day it appeared in the headlines of the papers that former overseer of carding who hated me so much knocked at my door that night and when he came in he said, "I saw the morning papers and have come here to tell you that I have $9,000 in cash and every penny of it is yours if you need it." Notice I referred to him as the *former* overseer of carding because I had long ago won that man's confidence, won his loyalty, won his friendship, and had promoted him to superintendent of one of the mills. He is still living not a thousand miles from here and I will gladly give you his name if you ask it, and incidentally he has three sons who are successful superintendents; two of them worked for me.

It is not bragging, gentlemen, when I tell you I am proud of that experience, that achievement, if you please, because he most certainly was a hard nut to crack. I firmly believe that one of the greatest achievements a human being can attain is to make a friend out of an enemy. When you can do that you need never have any apprehension about being able to work people. If you will refer to our chart and make an earnest effort to improve your personality you will get a lot of pleasure in making friends out of enemies and I am confident there are some men who read this article have got the spunk in them to do it, men who can overcome stubbornness, who can prove they are unselfish, men who are broadminded enough to realize that one

(*Continued on page* 108.)

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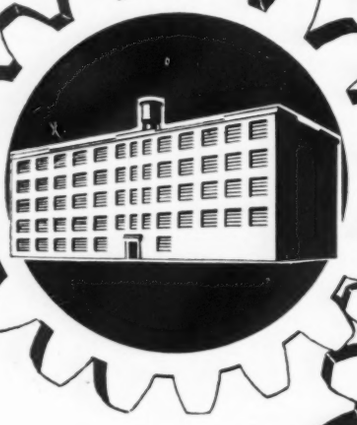

The tremendous problems of today tend to obscure the future for most of us. What will happen tomorrow seems unimportant against what is happening today. But is it? The markets of the future will demand textiles of every type and description . . . and the time to plan for them is NOW. ★ We have established a Textiles Planning Board to meet with manufacturers on tomorrow's textile problems . . . and how to solve them on a practical basis. The members of the Board are all textile experts and engineers with years of successful experience behind them.

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HOW OTHER MEN MANAGE

Standard Strength of Single Yarns?

EDITOR COTTON:

I will appreciate seeing in "HOW OTHER MEN MANAGE" some discussion from readers of COTTON on how to figure the standard breaking strength of single ends of combed yarns. We are using 1 3/16-inch Middling cotton, with yarn numbers from 30s to 60s, with twist multiples varying from 3.00 $\times$ the square root of the number to 4.75 $\times$ the square root of the number.

I am familiar with skein breaks, but want to be able to figure single end breaks.

CONTRIBUTOR NO. 7410

Do Overhead Cleaners Increase Ring Wear?

This fellow has brought up a thought that is brand-new to everyone who has heard it. What is your experience with ring life in recent years?

EDITOR COTTON:

It has been stated by several competent observers that the use of the traveling overhead cleaner now found in many of the best managed spinning rooms has reduced the useful life of the rings. We were interested in the statement because it presented an entirely new thought to us, and we submitted it to an organization which is in a good position to know something about the life of spinning rings, and thought you might be interested in publishing their response, which read as follows:

In former years, when running on single shifts of 55 to 60 hours weekly, mills expected to get at least 15 to 29 years of useful life out of their double adjustable rings. In those days, rings were smaller, spindle speeds lower, traverse shorter, and the traveler speed was 15 to 20 per cent lower. The use of humidity in the spinning room was not as prevalent as it is today. We are sure that under present-day conditions rings do wear out sooner, and this is true in spite of the fact that the rings manufactured by reputable ring makers are better than they ever were. The present-day rings are smoother, with harder wearing surfaces, and they possess a higher degree of accuracy as far as regularity and circular truth is concerned.

Naturally, running a ring for two or three shifts, week in and week out, perhaps a large portion of this

WE INVITE our readers to make use of this department for the discussion of any and all problems arising in the mill or finishing plant. Questions, answers or letters need not conform to any particular style and will be properly edited before publishing.

◆

time with worn travelers, takes some of the life out of the ring, since it is under the influence of heat from the traveler almost continuously and never gets a chance to cool off to atmospheric temperature except at the time of the week-end shut down.

Furthermore, mills do not take as much care of their rings as they formerly did; the accumulation of lint and dirt, hardened into a tough scum on the ring rail by the combined action of heat and humidity, creeps up to the polished surface until it is cut down by the traveler.

As regards the overhead cleaners, we must say that this is a new thought to us. However, it is true that the majority of these useful devices do blow the dust right down onto the ring rail and it seems to us that perhaps this film of dust combined with the rapid movement of the traveler could create a possibly dangerous abrasive action.

Please bear in mind that we are making no positive statement about this at the present time; we thank you for bringing this matter to our attention and we are going to institute a survey to see if we can get some real facts about this matter. We plan to write a report on this subject as soon as we have compiled enough factual evidence one way or the other.

CONTRIBUTOR NO. 7399

(We particularly invite the comments of other readers on the points raised here, which should provide a pertinent opportunity for the discussion of the subject of spinning ring life as affected by recent trends and practices.—The Editor.)

Springs to Condense the Card Sliver

EDITOR COTTON:

We recently secured some small springs to install on each end of the doffer calender rolls on cards to condense the sliver. From time to time, we have read in various textile trade magazines that other mills have tried out these springs with varying degrees of success and we would like to get in detail the experience of some of these.

I would appreciate it very much if any mills who have installed these springs would answer the follow-

ing questions for your "How Other Men Manage" Department:

1. Are you still using these springs?
2. What have been the results as to good drafting on drawing frames, roving frames, ends down in spinning, and the breaking strength of yarn?
3. Was it necessary to make any change in the size of the doffer for coiler calender rolls or in the gearing to compensate for the tighter sliver between the doffer calender and the coiler calender rolls?

Any information in answer to these specific questions and on the subject of experience with these springs generally will be greatly appreciated.

Contributor No. 7409

Long Draft Roving and Spinning

Editor Cotton:

The past 15 years have seen the development of long draft spinning, and subsequently its partner, long draft roving. Many things have been tried, some being kept and some eliminated, but the two new processes presented a wide field for experimentation.

Shortly after I entered the mill game, our mill adopted long draft spinning, using the change-over method. Naturally, we also benefited in the card room as well in spinning, in fact, I believe that we really cut our cost more in the card room than in spinning with the adoption of long draft spinning, due to the reduction in processes, floor space, etc.

We changed the card room equipment around considerably, moved various roving, eliminated some machines, added cards, drawing, slubbers and some intermediates, as well as spinning frames, and in doing this I was well initiated into the advantages that can be gained by reducing spindle speeds, removing twist, increasing roving frame production with heavier hank roving, and better running spinning with the lower speeds of roving spindles.

Where still other changes have been made from conventional to long draft spinning, the card room has been able to reduce its cost, even though the multiple process roving has been kept, because of the extra pounds that can be put through in each hank. Some of the changes have been from 4.25 hank roving to 2.80; from 4.50 to 2.60; from 2.80 to 1.85; from 3.00 to 1.55; from 1.40 to .74, etc.

With all of the various changes, we have found that machines that are supposed to be identical, operating in the same mill and often in the same room, will produce a product of different quality.

For instance, in the installation of one new job of spinning, and the change-over of a number of frames within the same spinning room, the change-over frames produced yarn with a higher break factor than the others, both using the same hank roving, same count of yarn and same twist multiples. This difference occurred consistently and was not an isolated instance.

On long draft roving frames, tests have been made by the writer on equipment manufactured by the same company, but of two different types, and on frames facing each other, and these too showed decided differences. Using identical specifications, settings, etc., except that one frame had hung weights and the other had a spring weighting system, yarn spun from the roving made on the hung weight frame, showed a higher breaking strength than the yarn spun from roving made on the spring weighted frame. We reasoned that this was caused by the springs being more sensitive to the larger and smaller places than the weights, and a better job of drafting was secured when the weights were used because they maintained the same pressure on the sliver as it passed between the steel rolls. Maybe we were wrong.

There are those in the industry that can argue either side of the debate for long draft roving as compared to multiple process, but I shall give some facts that I have run across.

Presently, we are producing 23s filling yarn from 1.40 hank roving, regular process, creeled double in the intermediates and made from .52 hank slubber roving with a twist multiple of 1.092, 1 1/16-inch cotton, creeled single in the spinning, and we have a break factor of 2077.

Alongside of this we are also producing 23s filling yarn from the same stock, but from double creeled 2.80 long draft roving (8x4) with a twist multiple of 1.365, drafted from 63 grain sliver or a draft of 21.04, the break factor being 21.35.

On warp yarn we are making 30s from single creeled 1.72 (10x5) intermediate roving, and from 3.25 hank long draft roving (8x4) double creeled and have break factors of 1951 and 1707 respectively.

In other experiments we have used another type of drafting on our roving, using the same 1.40 hank roving and making 21s warp single in the creel and getting a break factor of 2107.

We have used a regular 3-roll 10x5 intermediate, changed the break draft to 1.27, opened the roll settings by ⅛-inch, drafting 1.40 hank roving from 62.5 grain sliver, a draft of 10.5, without any trumpets, aprons or multiple gearing. The break factor was 2067.

On the long draft with conventional rolls we began with 13 lays per inch on 1.40 hank roving, and had ends down of 62.5 per 1,000 spindle hours. Taking out two teeth of twist, and opening the lay to 10 per inch, we reduced the ends down to 44.5, or 28.8 per cent. This was on 21s warp yarn, 4.68 twist multiple. Using this roving we tried to make 24s filling with a twist multiple of 3.4, but had 112 ends down per 1,000 spindle hours.

Installation of long draft equipment makes additional demands on the preceding equipment. Pickers, cards, drawing and roving must be kept in the best of condition. It is necessary to reduce back-lash, loose keys and roll necks, and to mesh the gears properly. Also, it is essential to have an excellent system of lubrication and overhauling.

The pickers must be kept well cleaned, all flues and drafts well opened or placed positively, and the screens in good condition. Excessive working of cotton in the opener and picker room sometimes proves detrimental. Other things that will prove helpful when using long draft are even laps, keeping feed rolls on cards in good condition, good calender rolls in coiler heads,

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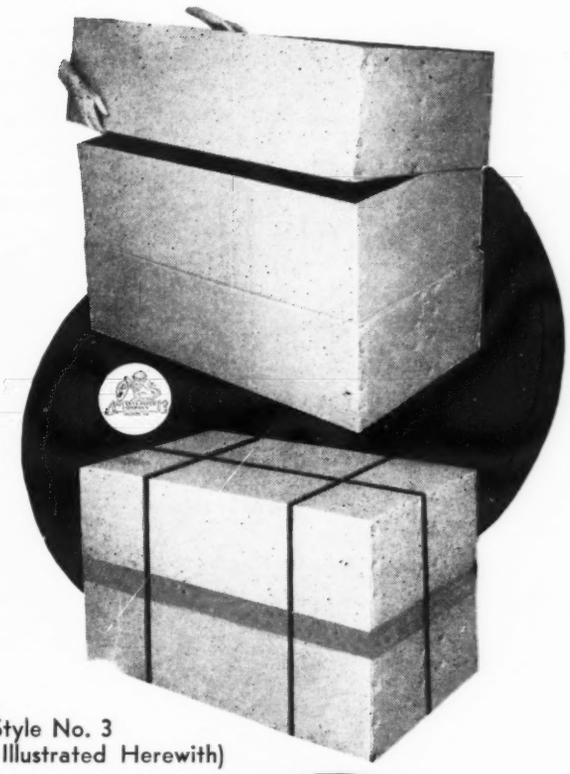

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CONTRIBUTOR NO. 7329

Timing the Harness

EDITOR COTTON:

"CONTRIBUTOR NO. 7349" wants some discussion on the timing of the harness on average plain weaves.

The timing of the harness on plain weave should be such that will cause the shuttle the least amount of chafing or friction in the warp. This is regardless of not taking into account the face of the cloth.

Oftentimes it is necessary to time the harness to give the maximum cover or face to the cloth. For example, on light weaves such as 64x60 or lighter, the cloth will be very reedy if the harness are timed so they will be level with the reed about 2 inches from the fell of the cloth. To get a smooth face on the light pick cloth, the harness should be level with the crank-shaft on bottom center or the reed about three inches from the fell of the cloth. This setting will not make a very good selvage, and the shuttle will hit the warp threads at the selvage but not enough to cause breakage.

In weaving goods of 76 picks and up, the face of the goods is not affected so much by setting the harness level with the reed 2 inches to 2¼ inches from the fell of the cloth, and this setting will make a good selvage which will run well. It may be summed up as a general rule to say that to time the harness by setting them level with the reed nearer the fell of the cloth will make the best selvages, while setting them level with the reed farther away from the fell of the cloth will put the best cover on the cloth.

The timing of the pick should be with the idea of giving the best throw to the shuttle for a smooth-running loom and this is on most looms just a fraction forward of top center of the crank-shaft.

There is much more to be said on this subject, especially for different styles of goods on different widths and speeds of looms.

CONTRIBUTOR NO. 7361

It Won't Be Long Now

(*Continued from page* 58.)

and not in borrowed money either—the less painful the readjustments will be when the war is over.

Borrowed money is not income, but after it passes out of the hands of the borrower, it is treated as income by those who receive it and who seldom give a thought to the fact that perhaps it isn't income and that ultimately they may have to pay it back. A government should therefore be most prudent about its borrowings and keep them definitely within its ability to pay, because after all, to win a war requires a certain amount of work and a certain amount of materials, and the government might as well buy these things at a fair value instead of a fictitious one. Attaching fictitious values to things merely stimulates inflation and invites calamity.

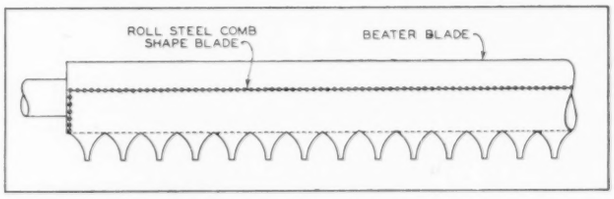
A Unique Beater

EDITOR COTTON:

The question put by "CONTRIBUTOR NO. 7294" on page 108 of the August 1942 issue of COTTON, asking whether a blade or spiked beater is best on the finisher picker, made me do a bit of retrospecting.

In the last war, like the present war, the largest production possible was demanded in almost every cotton mill. I remember a case back in the year 1918 where the carder increased the feed to such an extent that the bladed beater was unable to clear the stock presented to it by the feed rolls, with the result that the stock would rise almost over the feed rolls, then when the feed rolls forced the stock to the action of the blades the accumulated stock would be drawn in, causing the beater to rattle, thus making a great amount of noise that could be heard in the next room.

At that time the only remedy was to speed the beater, which was wrong, or reduce the feed, which could not be done owing to the demand for more production. The same thing happened a few weeks ago in a mill in Massachusetts and the carder—a graduate of a textile school—hit upon an idea which I am passing on to the readers of this department. Referring to the sketch, the reader can see at a glance the efficiency of this design.



The blade, comb shaped, is ⅛-inch in thickness, and composed of roll steel and is welded to the beater blade. This new design enables the beater to clear the feed rolls of every inch of stock.

This young carder deserves a great deal of credit, and I hope he will read this article.

He knew that the trouble could be cured by speeding the beater, but he also knew that increasing the blows to the inch injured the stock, which makes the stock fluffy. Will this design be the beater blade of the future?

On the same page in the August issue the question is answered by "CONTRIBUTOR NO. 7308". This contributor states, in the third paragraph (referring to the Kirschner beater), "Then too, when the beater is inspected after considerable usage, the pins show a very definite wear on the points. These points become bent or worn from contact with the stock."

In all of my mill experience I never knew that spikes could be injured by coming into contact with open loose stock. Instead, the spikes are injured by coming into contact with material of a hard nature or roller laps.

All practical men know that opened stock will not injure the spikes, but will wear the spikes.

Many carders try to repair the pins, but this is as practical as sharpening the licker-in fillet with a soft brick. Neither method is practical but always a fail-

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ure.

The smart carder will instruct the picker boss to have his help raise the beater bonnet before the machine is started to see if roller laps exist on the feed rolls. He will have a few new laps on hand and when one is injured it can be replaced with a new one.

If the reader is up against this problem, instead of speeding the beater, he should try the design given, if possible, and I am sure his troubles will be over.

Remember that roller laps increase and become almost as hard as a rock.

WASH (R. I.)

Twist in Roving

EDITOR COTTON:

I was greatly interested in the discussion of twist in roving, by Mr. John Duerst, on page 126 of the July issue of COTTON. He submitted a further explanation of the Duerst formula for figuring twist in roving and yarn, which had been described in the January 1939 and December 1939 issues. He was answering in the July issue a question from one of your correspondents as to whether the twist in the roving has any direct effect on the tensile strength of the yarn.

I was interested in Mr. Duerst's comments, and while I do not wish now to enter a discussion as to his formula, I would like to submit some supplementary comments on the question of your correspondent about the possible effect of the twist in roving on the strength of the yarn.

On the surface, I could not picture roving twist going through the front roll into the spun yarn. On short draft spinning where the rolls are set just off the staple with low draft I could see how some twist could come through the rolls, but I wasn't sure about long draft spinning.

The idea occurred to me to examine carefully both the single-belt and double-belt long draft under a good magnifying glass. In both cases the rolls were set 1¾-inch, with 15/16-inch staple, 1.20 turns per inch of twist in the roving, drafting 12 to 16. Due to the distance between the rolls and the high draft, the roving was permitted to untwist completely.

It may be possible on short draft, with close roll settings on the staple and hard twist, for some roving twist to get through the rolls. In this case the twist would be divided by the draft, making the amount negligible. Then, too, both roving and spinning twist must be in the same direction. If in different directions, one would tend to offset the other.

It is true that the roving must have enough twist to hold it together while it is in the spinning creel; also, it must not have too much, or the rolls set too close to the staple length, or the fibers will be broken, weakening the yarn.

From the foregoing observations and reasoning, a general rule something like the following might be formulated:

The lower the spinning draft and the nearer the roll setting approaches the staple length and the higher the roving twist, the greater the probability of some roving twist coming through the front roll into the spun yarn.

The problem of finding the proper twist multiple is one all mill men should be concerned with. However, some are such slaves to tradition that they refuse to lower the twist multiple even when tests prove lower multiples to be better. Each mill man should want to find the twist multiple best suited for his particular cotton, machines and settings, to produce the best finished product.

One thing to keep in mind is that the strongest yarn does not always produce the strongest fabric. There are so many things involved here that I shall not attempt an explanation.

I have made tests on warp yarn and fabric made with 4.50 turns of twist per inch which were some stronger and ran about as well as yarn and fabric made with 4.75 turns of twist per inch in the yarn. It is my opinion that the increase in production will more than offset the increase in the amount of waste made if there is such an increase.

I find my own opinion as to the better breaking strength coming from a lower twist multiple to be verified by a discussion by "P. R. K. (Mass.)" in an article on page 87 of the April 1934 issue of COTTON entitled "Effect of Twist on Yarn Strength". He pointed out that "while increased twist may raise the yarn strength, the best twist is not necessarily the highest twist; there is a happy medium," and went on to report the results of a test on 20s/1 carded yarn, spun onto a filling bobbin with filling wind, made from 1-1/16-inch Middling cotton. He showed the following results as to breaking strength from different twist multiples:

Twist Multiple	Break in Pounds
2.5	29.25
3.0	84.00
3.5	94.50
4.0	102.50
4.5	104.30
5.0	102.80
5.5	92.50

CONTRIBUTOR No. 7391

An Old-Timer Says—

(*Continued from page* 101.)

rotten apple will eventually cause other apples to rot.

To test my confidence in the ability of you men I am going to suggest that in a reasonable length of time, if you have made any progress toward winning the confidence of some section man or operative who does not like you or you do not like, that you sit down and write out in a few words relating that experience and mail it to OLD-TIMER in care of COTTON without signing your name if you prefer. That experience may give me a lead from which I can help you further. I do know one thing: you will get a big kick out of doing it.

Do that enemy of yours some small favor by taking an interest in his work—every human being has some good qualities, and by telling him you know and appreciate those good qualities it will not offend him if sometimes you are forced to tell him of some of his bad qualities. You do not have to be a goody-goody fellow to win a man's confidence and friendship—far their respect. Go back to the chart and you will see from it. You don't have to be easy on people to win Respect, Honesty, Tolerance, Dignity, Fairness,

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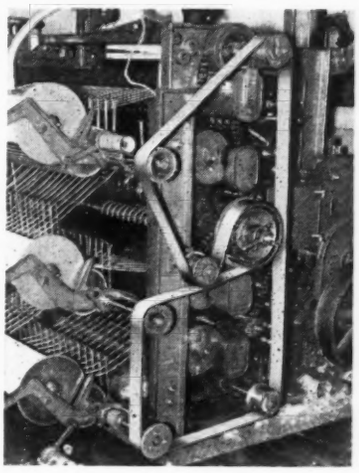

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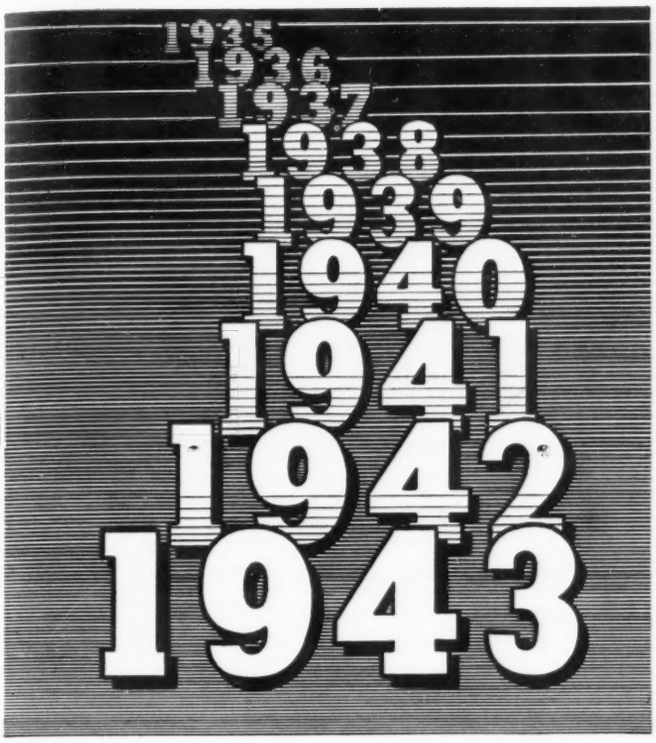
It would be a great source of pleasure to me to know you have improved your personality and thereby your chances of success, but what I am trying to get you to see is that it is *you* who will profit by any effort you put forth. I can bring you an automobile and if necessary show you how to operate it, but, by George, you have got to take hold of the thing and run it if you get anywhere. You know to get *action* you must have *desire* first. I believe some of OLD-TIMER'S readers have that desire. I hope you all have it. The ones who have that desire can improve their personalities, they can make friends out of enemies, they are broad-minded and unselfish enough to make friends out of people they do not like, and remember, fellows, you will get nowhere fast unless you take hold, and in a reasonable time be able to sit down and record on paper that you have made progress and you should be so proud of the fact that you not only will be glad to tell OLD-TIMER, but you will find yourself wanting to tell other people that you have taken the greatest step toward building up your personality that any human being can do, and that is to *make a friend out of an enemy.*

Box Multiplier

The box multiplier is used to shorten the box chain in filling striped goods. The box chain is constructed of short and long bars. There is another chain called the multiplier chain. The long bars in the box chain set the multiplier in action, and the box chain remains motionless until a riser in the multiplier chain sets it in motion again. If it is desired to make 100 picks red, 100 picks yellow, 100 picks blue, 100 picks brown, the multiplier and box chain would be constructed as follows:

The multiplier chain would be made of 10 bars, of which 9 would be filled with sinkers and the 10th bar with a riser. The box chain would be made up of 40 long bars, each bar representing 10 picks. If, however the pattern called for 104 picks of each color, then the box chain would be made of 10 long bars and 4 short bars for each color. The long bars make 10 picks each and the short bars one pick each. The multiplier chain remains the same. The multiplier chain can be made with any number of bars thereby shortening the box chain. The same pattern could also be made as follows: 4 colors, each color 104 picks. The multiplier chain with 20 bars, the 20th bar having a riser. Box chain 5 long bars and 4 short bars for each color. There is not a set rule for constructing the multiplier chain, but if the reader understands the foregoing he will be able to construct others.



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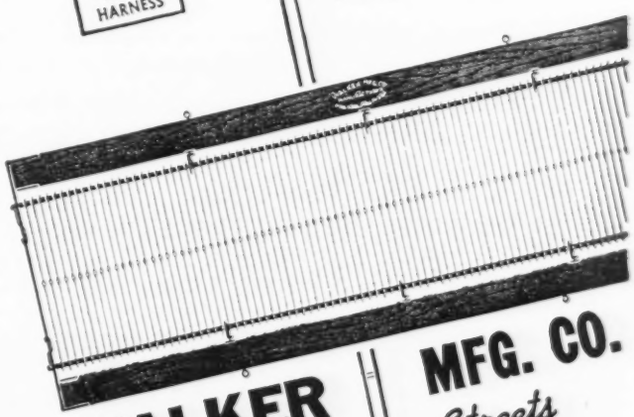

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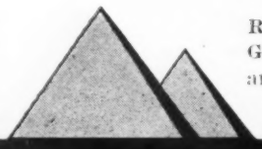

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251. **GILMER BELTS FOR THE TEXTILE INDUSTRY**—40 page booklet on belting and drives for all textiles. Includes engineering information, tables, formulas.—L. H. GILMER CO., Tacony, Philadelphia, Pa.

252. **TEXTILE MACHINERY LUBRICATION**—Illustrated booklet giving Lubriplate applications for all types of textile machinery.—LUBRIPLATE DIVISION, FISKE BROS. REFINING CO., Newark, New Jersey.

253. **HOW TO GET THE MOST FROM YOUR LEATHER BELTING**—Illustrated booklet on leather belt installation; maintenance; cleaning; dressing; aligning shafting, pulleys.—AMERICAN LEATHER BELTING ASSOCIATION, New York City.

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302. **LUNKENHEIMER CATALOG 78** — 136 page catalog describing a complete line of Bronze, Iron and Steel Valves, Boiler Mountings, Lubricating Devices, Air Devices and other specialties. Also included is a section on the thermo-dynamic properties of steam, and a table of shipping weights.—THE LUNKENHEIMER CO., Cincinnati, Ohio.

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WEAVING, SLASHING . . .

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Continued on Page 114

Continued from Page 113

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KNITTING . . .

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MISCELLANEOUS . . .

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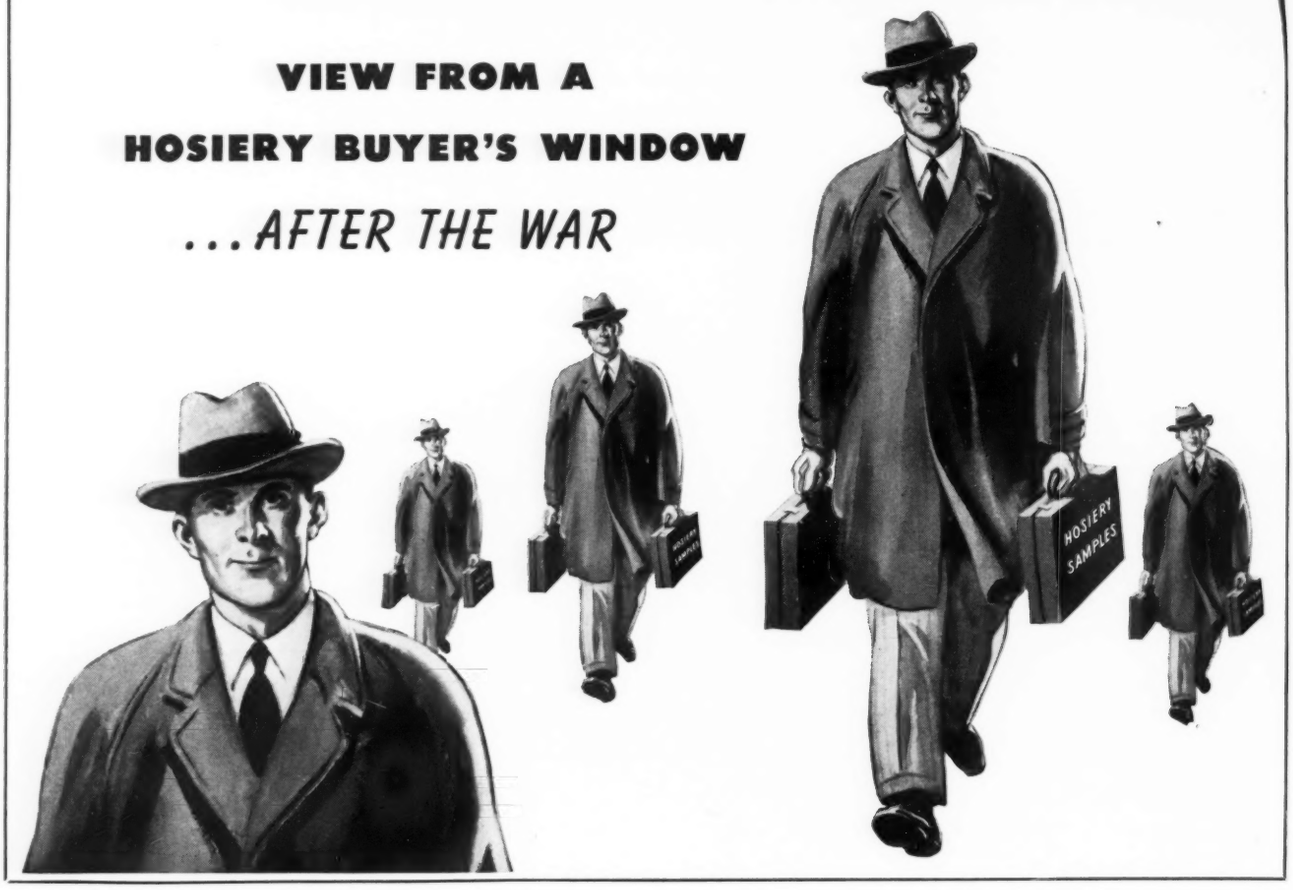
VIEW FROM A HOSIERY BUYER'S WINDOW

...AFTER THE WAR



There will be no shortage of yarn, no shortage of rubber, and—of this you may be sure in the buyer's market that will follow the war—no shortage of *competition*. Consumer demand and business enterprise will be "rarin' to go." Meantime, the war is telescoping years of progress into months. Each new style development and manufacturing method must be weighed for its possible effect on future business operations. Particularly is this true in the hosiery industry, if the new demands after Victory are to be met without false starts and wasted time.

For one thing is certain... the hosiery industry will not return to where it left off before the war began. The buying public has shown unusual interest in the new hosiery developments of wartime. Of special significance are the many fresh fashion trends that have been inspired by the industry's ingenuity with the yarns available, many of which are able to stand on their own merits quite apart from the war's influence.

These all represent opportunities for post-war business—but opportunities that must be *planned* for and realized through pointed action. Merely *thinking* about the future is not enough. Far-sighted manufacturers who want to make the most of knowledge, techniques and skills developed by war production will begin now assembling data and information which will enable them to act quickly, and be in a good competitive position, just as soon as the war is over.

Obviously, the right knitting equipment—machinery designed to meet the new needs when the time comes—is of first importance in any program of future planning. Here at Scott & Williams, we have been setting our sights, so far as we can look ahead, in anticipation of the conditions that will prevail in peace. Why not make an early discussion with us your next step in post-war business planning?

The high efficiency of Scott & Williams knitting machines can *only* be maintained by using genuine S & W knitting machine replacement parts. You can count on prompt delivery, too, from S & W stockrooms at Laconia. Teletype service is free from our New York and High Point offices.

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KNITTING SECTION

Training Female Operators on Full-Fashioned Machines

By Earl Roberts

ON PAGE 121 of the December issue, this author cited the problem facing hosiery mills today; that of using girls as machine operators instead of men, on full-fashioned machines. Here he gives a detailed outline of his ideas on how girls should be trained for this work. His remarks are soundly based on actual experience in having to do this job, and any mill management will find his views of interest and help . . . . . .

IN THE December 1942 issue of COTTON we discussed the serious crisis facing the full-fashioned hosiery industry and the reasons why mills should not be too lax or backward in changing over to girls to operate the machines, to take the place of men who are leaving the trade for various reasons. In that article we promised to outline a method of instruction for girls which to our mind will achieve the best results in the shortest possible period of time. We realize that some will say, "It is easier said than done," and while this is everyone's privilege, it is more or less a defeatist attitude—this throwing in the sponge before the battle has even begun. It should not be too difficult to teach girls if the problem is approached in the correct manner.

The most important factor is a right start, a beginning that is well thought out and planned to the smallest detail. Patience and more patience will be the requisite of success.

Toppers and Loopers

We still adhere to the idea that toppers are no doubt the best material with which to work and we place them in the Number One spot on our list. There is no reason why they could not be placed immediately on leggers as helpers and learn in a very short time some of the more intricate rudiments of knitting. The majority of them already understand what frictions are used for, what part the carrier and narrowing racks play in making a stocking, and other supplementary facts that are highly important, such as the breaking of the ends at the completion of a set and the tying up of the yarn. These last two items, however simple they may be, take precious time for a newcomer to learn, and a minute saved is a minute earned. We must remember, too, that toppers are not as prone to make costly mistakes for they are more or less acquainted with what can happen when an operator is stricken with a lapse of memory. They appreciate the necessity of caution: that "be-on-your-toes" temperament that every good operator must develop.

Turning welts is not too much of a mystery to toppers as they are already well versed in handling transfer bars and possess a certain amount of "feel" toward a bar. They understand thoroughly that most welts are turned manually and about all they would have to learn is the actual manipulation of the bar during the turning operation. Here again we are confronted with the fact that they can well realize that the carefulness they exercise will pay dividends, something that must be patiently explained over and over again to a "greenhorn". It is our contention that almost any topper can become a fair welt turner in three weeks, and by that we mean she should be able to turn a set of welts without consuming too much time. Learning the different changes on a machine would be practically nothing but routine work. Yes, the mill that can hire some toppers is fortunate, and this should not be too difficult in sections where the advent of the round heel has put many of them out of work.

As the next best bet we would choose loopers, and as production has been curtailed considerably there is no reason why there should not be an oversupply of these skilled workers. They know how to handle hose and would not be in the least awed by the appearance of a knitting machine, most of them having become acquainted with these delicate monsters while practicing their regular trade. One thing is certain: a looper should have the fortitude to stick it out, a quality very desirable in any employee, but especially in a learner. Her end of the business took a lot of patience and stamina to learn, so we must necessarily take it for granted that she will display the same good spirit in the knitting room.

Moreover, why should we not keep the people working we already have in the trade? It would seem that the war has created a condition whereby in future years any skilled worker must be versatile indeed, and probably it is for the best. Imagine, if you can, the distant future, when it might be common for a topper or looper to operate a legger one day and go back to her first trade the next. Maybe that is looking too far

ahead, we don't know, but after all it is something to think about.

The Totally Unskilled

While the totally unskilled type will probably present problems at the start, the same as any male learner, let us remember that they are possessed of as much brains as any man, and, incidentally, we must remember one very dominant factor and that is not to make the rash mistake of trying to rush our new girl along at too fast a clip. This is one of the gravest mistakes made in the past few years: expecting every learner to grasp too many things at one time. These newcomers can absorb just so much in any given time and if the opposite is expected of them no one suffers in the long run but the mill.

And remember the average girl is not as mechanically inclined as the male. While we admit that production is direly needed, rushing tactics would be the longest road to the ultimate goal, which is having girls efficient enough to run sets off of the machines. They should be given their lessons by degrees, and the smaller the dose the better, for there is the chance that if they are urged along at too fast a pace they will become discouraged and quit. Operating a knitting machine is tedious and nerve-wracking at best, whether we care to admit it or not, so let us give a girl every fair opportunity before drawing too many conclusions as to her ability, and even after it might be decided that some certain girl is not making the grade, we should pause and think the situation over, being sure the fault is all with the girl and not with the way in which she is being instructed.

Under no circumstances should we hire a girl, place her on the floor and forget about her, leaving it up to someone else. Do *not* put her on a machine with an operator, walk away and expect to come back in several months and find her making production. Though it be but one girl, she is an investment, and the management should accept the full responsibility for her training, putting its strength to the oar, as it were. It is but human for an operator to do only so much, because in the majority of cases he does not wish to lose time teaching a learner, least of all a girl who might be somewhat backward. It is our contention—and we do not think we are sticking our necks out in making this statement—that 95 per cent of the failure or success of a program of this sort is directly in the lap of management. As in days gone by, good management will assert itself under the trying conditions of today, and we shall probably see the same mills on top that have weathered many storms before this one.

Our new girl must be given every opportunity to develop any latent powers or ability she may possess, and this takes time. It will require a little longer to draw them out than it would in the case of a man or boy, but nevertheless, they are there for the asking and one must be intelligent enough to understand and make the best of it. It should be readily admitted that girls will probably be more careful in handling hose than men would be for the simple reason they have been the eventual consumers of these goods for years and the first thing they should be made to understand is that the management would appreciate it greatly if they would be just as careful in handling the unfinished goods as if they had just bought a new pair for themselves. In most cases a girl should comply from a natural instinct not at all inherent in a man: an instinct we could use more of in the knitting room.

Beginning the Instruction

As the first and most important step in a girl's education as an operator, something very simple should be given her to do, such as bundling or tying up the work as the operators take it off of the machines. This should acquaint her with how to handle the hose in, say, about three or four days. She is by now fairly adept at it and as this now does not consume all of her time she is given other duties. In some convenient and specially built nook are placed a needle bar, welt bar, picot bar and narrowing finger set up in such a position that they have practically the same pitch as those installed on the machines. She is taught to take out and replace the small sundry parts in these bars in between tying up work. While pliering is important in the end, it is not forced too strongly upon her at this time. She is shown how to do it, of course, but she should be allowed to develop her own technique, because it will be many weeks before she is permitted to take over a machine completely, which includes the upkeep of needles and points of all kinds. At the present, all that is necessary for her to know is how it is done and to get it done as quickly and as efficiently as possible.

It should be explained to her just what each of these parts plays in the finished product, and day by day she is asked to repeat what she has been taught.

At the same time, she is instructed how to transfer re-barred legs, as is customary in most mills as an essential way to keep down press-offs while holding production up to a maximum. There is no mystery to this, but a person must develop a certain knack of holding the bars on the needles as the loops are transferred. There never should be more than one stocking on a bar at a time as this would be more or less confusing to the unskilled until they become accustomed to this work. A learner should be worked up gradually to the point where she can handle a bar with 10 or 12 stockings on it, for the extra amount of hose hides from view just what is really happening as the loops leave the points and slip over the tops of the needles. It is relatively important that a learner know how to do these things in the best manner, but it is of more importance that she know what is taking place and why.

Alternating between these different operations should make a difficult job less monotonous, at the same time creating a certain amount of confidence in a girl that it would take weeks to instill if she had been started off haphazardly on a machine right from the beginning. It will go a long way toward eliminating that "lost" feeling any learner has while watching an operator do things of which she knows nothing. This is something that will take care

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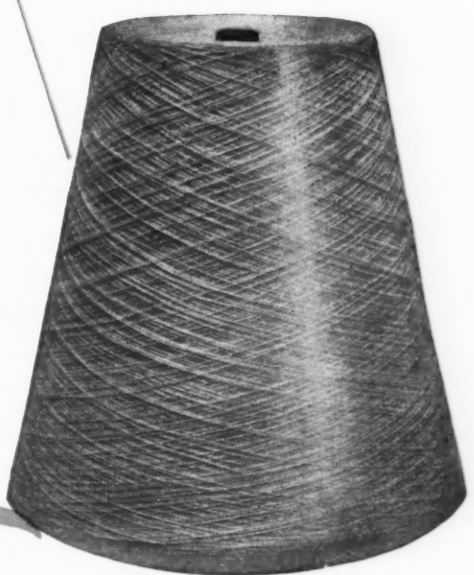

During these months when a large proportion of our product is going into many and varied items for war needs, we are devoting our best efforts toward giving SERVICE to our regular customers to make up for some shortages beyond our control.

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and expert guidance to eliminate and it should be avoided by all means, for many times it is the nucleus of an inferiority complex as far as a hosiery machine is concerned. We have had occasion to observe boys being taught the trade, standing around in an aisle for weeks without the slightest conception as to what it was all about, becoming imbued with the idea that they must be pretty dumb or they would be given more opportunity to pitch in and do things. We have seen some of these boys go for weeks without being permitted to open or tighten a needle plate or put in a needle.

This must not occur with our girls. This is one of the first things they learn, and if they are placed directly on a machine it would have been the last for after all the operator is on piece work and does not wish to lose time unduly no matter what the reason, therefore he takes care of all broken needles and points himself because he gets it done in the quickest possible time.

After about two weeks our girl knows just as well as the operator how to do it and while it is admitted that she does not accomplish it as fast, the fact remains that she *can* do it, and speed will gradually assert itself as she gets more practice after she is placed on a machine.

This basic training is of paramount importance because it has much to do with her ultimate ability to produce, which is the end we are seeking. An automobile, a house, anything is built from the bottom up, and so it is with these girls: things they must know while operating a machine, they should be taught *before* they are placed on a machine, not just permitted to drift along and learn as best they can—something which almost any operator of today will admit occurred in his case.

It is not our intention to prognosticate, but if it takes words to put over the fact that these girls should be taught correctly, they are going to be used profusely. It has been our good fortune already to have had the opportunity to observe one mill that brought girls in by the dozen and let them go at a rate that was appalling, and to our mind, the biggest mistake made is just what we are saying should be avoided, no matter how much it seems to hurt in the beginning. In the end, it will pay dividends that could not have been achieved otherwise.

Building the Chain

Now, our girl has been learning for about three weeks and as she is about ready for further instruction, someone else must be employed to take her place. At this point we must instill more confidence in her by the simple expedient of allowing her to pass on to the new girl what she has learned, under the watchful eye of someone in charge, of course, but this watchfulness should be guarded and not made too apparent. Whether it be true or not, she must never be permitted to think that the boss has the idea that she has not learned enough in the past three weeks. Call this pampering, or what you will, but the fact remains that a little psychology goes much farther than hard-headedness or cussing—and perhaps with a few of the fairer sex in the aisles the latter will be less conspicuous.

For two days our heroine does nothing but watch and instruct the new girl and report to the foreman when she thinks it is safe to turn her loose, but he knows, of course, if he has been on the job, too, using his eyes for something beside looking at the seconds and bad work reports.

Right here, too, she needs a little pat on the back, and if you have ever handled both sexes you can well realize that women take a lot more petting than men, even after they learn their job. Anyway, a little encouragement goes a long ways, and as she is ready for the next phase of her training, she needs a small amount of morale bolstering to prepare her for some of the trying days that lie ahead. It is much easier to teach a person in the right state of mind than someone who is half worried about the future and not quite sure of herself.

The Second Stage

Now, she is taught to insert welt bars at the beginning of a set and hook them up when the needles are turned down. She is not only shown how to do it but how not to do it, thus eliminating from the start her having to learn by trial and her own mistakes. This will hold true from here on out. There is but one correct way to go about the different operations, and as every learner eventually will make the identical mistakes, it saves time to show them just how many ways it is possible for them to do a thing wrong, thus causing a bad stocking or for that matter a whole set.

For one week she does nothing but learn this first operation, meantime replacing any welt hooks for the operators that may be broken during the course of the week. About the third day she may be given a pair of scissors and then allowed to help in cutting the ends. It is understood she is still working on the identical number of machines she did while tying up the goods; but all her instructions come from one good operator who must necessarily be paid for his efforts. The best and most careful operator obtainable should be used for this work and he should teach her *his* way, with the other operators having instructions to offer no advice whatsoever. A good operator has something on the ball, and advice from everyone in the plant will accomplish nothing but confuse the girl to a point where she will begin to wonder if anyone knows the right way. All operators work differently, some good, some bad, but no matter how there is usually a decided difference, a difference that does nothing but hold up the parade—as far as our girl is concerned.

The Third Stage

Next she is taken to a machine that has been set aside strictly for the purpose, the machine she shall eventually operate, by the way, and taught how to start a set. She is permitted to do all the manual labor and is shown just what happens when the yarn is pulled during the cutting process, the friction not locked properly, the needles run down too far, the loose course cam not in operation on the first course, the carrier rack or any block that might interfere with the course of the welt

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NAVY DEPARTMENT
WASHINGTON
Navy Board for Production Awards
2118 Massachusetts Ave., N.W.

NBPA-437

November 3, 1942

Dear Mr. Janssen:

I am glad to advise you that after careful consideration at its last meeting, the Navy Board for Production Awards granted a renewal of the Army-Navy "E" Award to the Textile Machine Works for an additional period of six months dating from July 25, 1942.

This renewal grants you the right to add an additional white star to your pennant. I am therefore forwarding to you through the Commandant of the Fourth Naval District a new pennant with two stars affixed.

On behalf of the Under Secretary of the Navy, I congratulate each and every one of the employees of the Textile Machine Works upon their continued splendid achievement in outstanding production. This award is difficult to win in the first instance and the requirements for renewal are equally exacting. By winning this additional honor you all have demonstrated a solid determination to supply our fighting forces with the materials they must have to bring this war to a successful conclusion.

Sincerely,

H. A. WILEY
Admiral, USN (Ret.)
Chairman, Navy Board for Production Awards

Mr. Henry Janssen, President
Textile Machine Works
Reading, Pennsylvania

The War Flags of TMW include: Army-Navy "E" awarded November 3, 1942; All-Navy "E" burgee awarded May 18, 1942; Navy "E" Pennant awarded July 25, 1941.

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Fiesta . . . Every woman knows that the glamour and gaiety of her stockings is in the beauty of the fabric. Every hosiery manufacturer knows that—regardless of the fibre used—it takes good needles to knit a perfect fabric. Keep your knitting machines young and effective with TMW Needles . . . *And remember: Regular Reneedling Pays! Let us put your needle bars in shape for faster, more accurate, more profitable knitting.*

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carrier rod being left in the same position it was during the operation of the machine on the previous set. On different types of machines there will be different hazards, but she must be made familiar with all of them. On one particular make of machine there is great danger of smashing a sinker head if the welt bar is not pulled out when the stitches are turned into the knock-overs. While this may happen to her anyway, there is less chance of its taking place if she is put on the alert to watch for it, making certain at all times that every welt bar is pulled out before the second course is made.

At this point she begins to learn how to start and stop a machine, nothing very difficult, but something that takes a little practice to master. More skill at this is acquired as the day wears on, as she does nothing but start sets and press them off until her teacher is convinced she is ready to go further. Please remember she is doing *all* the work, the instructor only advising when necessary, and so it is to the first picot and to the completion of her first set of welts. She is shown how to turn the first one and then, with the instructor hovering over her, turns the rest, probably spoiling the biggest majority, but this is to be expected.

These welts are pressed off and the same operation done all over again and by the time she has run down and turned six or seven sets of welts, she will have a fairly good idea as to how it is done.

Now she is ready to go back to the floor and do nothing but cut ends at the start of a set and turn welts, with her instructor always near, coaching her and helping her out of bad situations with bars when she does not manipulate them correctly. In three days at the most she should not need him any more, letting each individual operator help her out of a hole if the occasion should arise.

Welt turning is something one must learn to do with speed, otherwise there is a loss of production, so our girl does this same thing every day for at least three weeks, longer if necessary. Turning welts on many machines gives her a chance to pick up the necessary speed, something it would take her six months to gather if she had been placed on a machine and only had the opportunity of trying her skill on it and the one in the aisle. Do not forget, too, that as she gets faster she is helping production along and is not the liability she was previously. This continual turning of welts should not be boresome, as there is something about welt turning that seems to fascinate every operator, young or old. Once you have a fast welt turner, your battle for an efficient operator is half over, the rest being routine work that does not take an excessive amount of time to master.

The Fourth Stage

Now she goes back to her machine, which in the meantime has been stripped of all yarn all the way down to and including the carriers. This yarn has been deliberately mixed up and it is her duty to tie it all back without making any mistakes, such as tying up a welt cone in the main yarn section or vice versa. At this point it is essential that she learn something about the different weights or denier of the yarn used in each portion of the stocking and be cautioned as to the dire results when lots from different throwsters become mixed, regardless of whether or not they happen to be of the same tint. The different lots should not be too difficult to separate for the simple reason that the tips of the cones are usually of different colors, thereby being easily distinguishable. If it happens there is a close resemblance in tint and the cones are of the same color, then the operator must necessarily look inside the bottom of the cone at the winder ticket which denotes the twist, denier and lot number of the yarn.

While she watches, one section is threaded up to give her something to go by, then she is left on her own to finish threading the remainder of the machine. By the time this has been accomplished, no more instruction should be needed on this score except that she is taken away from the machine for a few minutes while the yarn is deliberately mixed, or switched. After she can readily pick out the switched yarn and place it in the proper section relative to knitting, the time has arrived for her to get down to business and run off a complete set, which she will do from now on. Her ground work has been finished.

The Fifth Stage

Once again our highly skilled operator stays with her, but—and this is a big but—as we have said once before, he does nothing but show her *what* to do, having nothing whatsoever to do with the manual manipulation of the different things necessary to complete a stocking. For her information, the shortest and proper way to make all of the changes has been written down on a piece of paper and strictly adhered to from beginning to end with no variation in the procedure. Remember, all that is desired at present is someone who is able to run off sets, and from the start she should not be permitted to begin a machine change other than the way in which she has been instructed. False moves are bewildering if allowed to go on and they will repeat themselves in spite of the best teaching. The teacher must be on his toes to see to it that he does not blunder, for if this should happen, what can be expected of the pupil? Every change must be made in precisely the same manner, with the girl being coached as to why she does certain things at certain times.

After about a week of this schedule the skilled operator drifts away during the run from the flare to the splicing where there are no important changes to be made, giving her a chance to be alone with the machine. These tactics progress to a point where he disappears before a simple change is to be made but he is still near enough to watch out of the corner of an eye at what is going on. Thus he will get a good idea as to just how the learner is progressing.

This goes on for six or seven weeks until the girl has reached a point where she can be left alone for a complete set, and from here on out only time itself will put the finishing touches on our girl operator. During this period she replaces all needles, etc., but

calls the operator to do the plier-ing. This pliering is something that must be learned gradually also, probably with more care than anything else connected with knitting machine, and as the girl is working in an aisle with an operator who eventually is going to be responsible for the upkeep of the machine, there is no set time necessary for her to learn to plier. Our contention is that no effort should be made as to this phase of knitting until the girl shows a tendency to want to do it herself, for then she will be in a better mood to do it right. Of course, when she is once allowed to start doing her own pliering, her work is inspected and gone over by a more skilled hand until she is capable of doing it herself. We must not forget the fact that it takes years to learn to line up needles and points efficiently, and there are many operators who never achieve that touch that it takes to become classed as good, so we must not be too critical of our girl. With a few good men around who are handy with pliers, this is the least of the troubles. The biggest problem is to keep the wheels rolling—getting those sets off the machines which in the long run mean the success or failure of any mill.

The Chain's Next Link

In the meantime, we must not forget that our second girl has been progressing and the time will soon be at hand where she also will be capable of taking over a machine. When this time arrives she is given the one in the aisle with the first girl who learned. The operator of this other machine now has two machines with girls on them, but right here it must be stressed that he also must be a good operator, for everyone is not capable of running one machine, let alone two. He must be an operator who is able eventually to take over four machines with girl operators, a man possessed not only of an exceptional amount of skill but with an abundance of patience. He should not be permitted to "bawl out" these girl operators for any cause, and if any difficulties arise they should be settled by the foreman.

All through this article we have pointed out that these girls should not be goaded along and there is no earthly reason why something of this sort should occur after they are on a machine and doing the best they know how. Do not forget that it is still possible that even with what they have already learned they can get discouraged and quit—and there is nothing in the world that will bring back the investment. After they are once skilled enough to run off sets, the thing then is to make it interesting and profitable enough for them that they will not entertain the idea of giving up this far along in the race.

One operator taking care of two machines will probably suffice in small mills, but in those of larger capacity it will probably be necessary to double the amount, it all depending on how many men are left. Four machines is enough for one man to take care of efficiently under the circumstances, and he should be paid accordingly for his labors. A piece work rate should be worked out that will keep him up and going at all times, as time work has a bad tendency to slow many men up who have not been accustomed to making it before the dozens have been run off.

Supplementary Facts

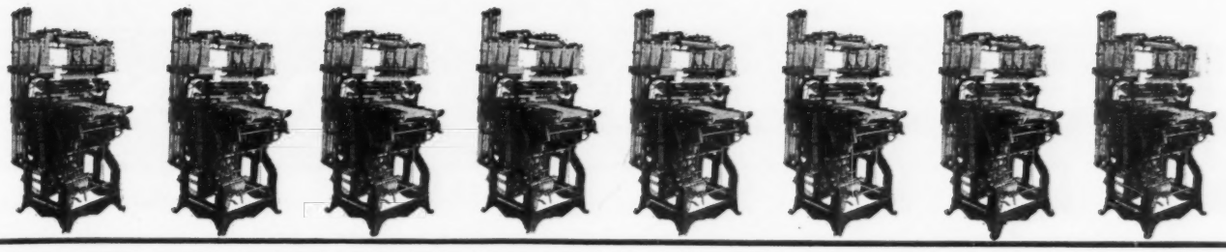
We have thought this matter over long and carefully after watching several mills attempt to do the very thing that is facing us. From these observations we have concluded that it is utterly impractical to hire five or six girls at a time, scatter them around in different aisles and leave them practically to shift for themselves. With this method, the number of rejections will be amazing, for while the girls may be doing their dead level best they do not seem to come along as fast as is desired—and this is through no fault of their own. It takes an undue length of time to teach them little or nothing, with the latter probably being the case. If they are placed under the wing of just any operator who happens to be handy it will soon come to light that this also will not work because just any operator is not capable of teaching help—especially a girl.

Perhaps this article could be elaborated on, but that is being left up to individual thought, for it would take reams of paper to go into every little detail every foreman should understand beforehand, but one fact is most assuredly certain—the best way to teach male or female help is to show them how, explain why, and then *let them do it.*

Labor-Management Board at Hemphill

A board of war production directors, comprising members of labor and management groups, has been set up at the Hemphill Company, Pawtucket, R. I., for the purpose of intensifying every activity that will contribute to the war effort by the company and its personnel. One of the first results of the new organization was the development of a plaque designed after the company"s "Banner" trade mark by one of

the company's employees. At a recent rally, banner-shaped pins inscribed "Hemphill Company War Worker" were given to all employees pledging full co-operation in the war effort and increased purchase of war bonds. Subcommittees on production, war bonds, suggestions, slogans, safety, honor roll and transportation have been appointed to assist the new labor-management directorate get the many-phased work under way. Suggestion boxes have been placed around the plant and payment will be made in war bonds for ideas on improving and hastening the company's war production activities. Incentives have been given, by departments, to encourage attendance and cut down on absenteeism.



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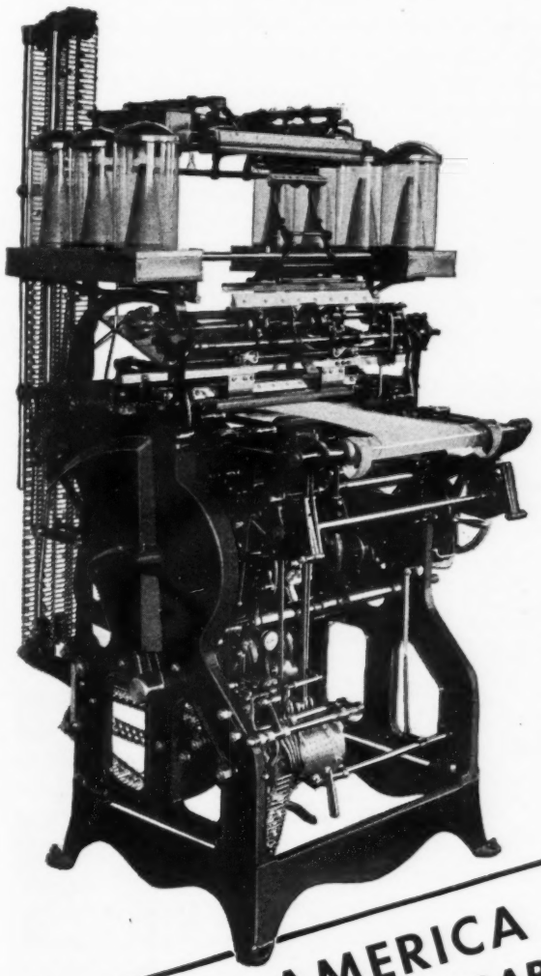

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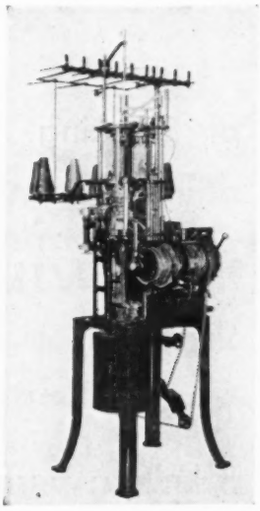
KNITTING KINKS

The Links-and-Links Knitting Machine

Article 23 in a Series on the Komet and Links-and-Links Machines . .



IN PREVIOUS articles we have discussed some of the mechanism which enables the Links-and-Links machine to produce patterns or designs. This can be divided roughly into three main items: The long upper cylinder with its selectors; the assembled selector lever bracket; and selector drum. There is of course considerable additional mechanism which is necessary to control the movement and action of the three main items.

A reproduction of Plate 31 from the Catalog of Komet and Links-and-Links machine is shown herewith. Here we see the selector drum assembly, middle bed plate (102110) and upper cam ring plate (102112). The selector drum, insofar as design or construction is concerned, is simplicity itself, consisting of a center (102091), casing (102092), and ratchet (204419). The front and side covers (204421) and (204422) respectively, are used to protect the pattern pins. The casing in which the pattern pins are placed is adjustable to the right or left (note screw 15277) so the pattern pins may be properly lined up with the actuating ends of the selector fingers in conjunction with the ratchet wheel movement.

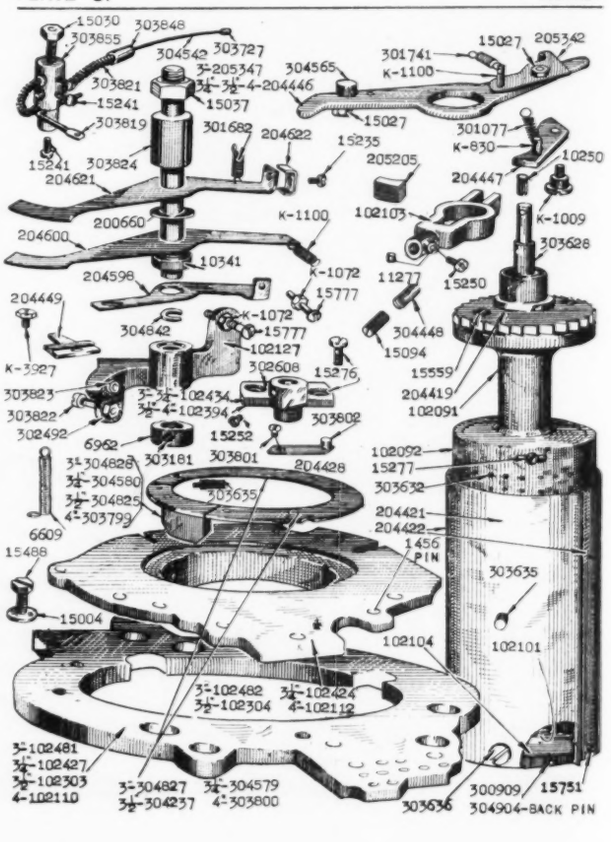
The selector drum is provided with an eccentric center shaft (303628) which permits moving the complete assembly *in* toward the cylinder or away from it, thus keeping the drum and pattern pins in the proper relation to the actuating ends of the selector fingers, permitting us also to increase or decrease the throw of the selector fingers.

The position of the selector drum is important and should not be changed without due consideration. Should it become necessary to remove the selector drum, for any reason, make sure to leave the setting as is. This can be easily done by removing the bracket screws (15276) and permitting the bracket (102394) to remain *on the shaft* when it is pulled up out of the selector drum. This simple method permits replacing the center shaft in its original position, thus avoiding re-adjustment.

Necessary friction to assure keeping the selector drum under control is provided by the friction bracket (102103) and friction (205205). Excessive friction on the selector drum should be avoided, as it puts an additional load on the drum driving mechanism and actually does more harm than good.

The selector drum is driven by the racking lever (204446), ratchet (204419) and pawl (204447), motion being supplied by an adjustable cam located on the upper cylinder carriage, the drum moving one rack for each turn of the cylinder. The selector drum movement is controlled by three levers: the selector drum pawl upper control lever (204621), lower control lever (204600) and lever (204598). The upper lever (204621) is operated by cable and chain links, also from the instep heel bolt rod. The lower lever (204600) is actuated by the selector finger control bar and toggle from the main drum cams. The control lever (204598) is provided with a shoe (204449) and a notch in the selector drum center immediately under the ratchet wheel.

PLATE 31 KOMET



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The outstanding features of the complete selector drum assembly are ample adjustment facilities which are simple in construction and positive in action, requiring very little attention or re-adjustment.

Up to this point we have attempted to describe briefly the mechanism shown on Plate 31 which is reproduced herewith. For the remaining part of this article, we shall quote from information supplied us by the machine manufacturers, as this covers the subject as well as anything we might say.

How Patterns Are Made

"The pattern is obtained on the Links machine by keeping the bottom transfer cam in operation throughout the knitting of the leg and the foot, so that *every* needle is transferred from the bottom cylinder to the top cylinder during each revolution, and those needles which are not required to remain in the top cylinder are transferred down again. This is accomplished in the following manner:

"In every slot in the top cylinder, above the sliders, a *selector* is placed. Each selector has a levelling butt at the top (to bring the selectors to the correct height for the selector levers) and *one* selector butt. There are *18 selector butt positions*, but each selector has a butt in only one of these 18 positions.

"Corresponding with the selector butts, there are 18 selector levers. When these levers are allowed to fall into the cylinder, for example, Nos. 4, 6 and 10, all selectors having 4, 6 and 10 position butts will be cammed down, taking the sliders down with them to a height where the sliders are brought into contact with a *fixed* transfer cam (204792). This cam completes the transfer of the needles to the lower cylinder.

"The selector levers are controlled from a pattern drum. There are 18 rows of holes in the drum at corresponding heights to the selector levers. The pattern drum is racked around from a cam (204822) on the top cylinder (one course—one rack). Where it is required to lift a selector lever out, a pattern pin is placed in the pattern drum. Thus it will be seen that a pin placed in the drum at a given position will, by withdrawing the corresponding selector lever from the cylinder, cause all the selectors which have butts in that position to leave their needles in the *top* cylinder, and vice versa, if no pin is placed in that position, the needles will be transferred to the bottom cylinder.

The Slider Set-up

"The *knitting* butts in both cylinders have exactly the same set-up as a regular two-feed Komet. In the bottom cylinder, every other slider has a *medium transfer* butt for knitting 1 x 1 and all remaining sliders have *short* transfer butts.

"The transfer butts of sliders in the *top* cylinder over the *long knitting* butts in the *bottom* cylinder are all short butts. Over the short and medium *knitting* butt sliders in the bottom cylinder are placed sliders having *long* transfer butts in the top with a group of *medium* transfer butts in the middle.

"These two lengths of butts are used to allow the top transfer (before the heel and toe) to move out without leaving a slider butt to catch against the corner of the fixed transfer cam (204792). This is done by using a stepped transfer control cam to operate top transfer bolt (204985) before heel and (204984) before toe. The transfer cam first moves out far enough to miss the short and medium butts while it is guiding the long butt sliders; and then it moves right out when the medium butts are passing.

The Timing of the Selector Levers

"When the machine commences to pattern, the selector levers fall onto the cylinder in two steps from a cam on the main drum. On the first step they fall in far enough just to miss the short butts on the selectors, and while a group of long butt selectors, specially put in for that purpose, are passing, they fall right on to the cylinder. This movement is done in two steps in order to avoid a lever dropping on the corner of a selector butt, and so knocking it down slightly, causing its slider to break against the corner of the fixed transfer cam (204792).

"When a selector lever is withdrawn from the cylinder by means of the pattern drum, it will be seen that a selector could be left with only half its downward movement completed, thus causing its slider to catch on the corner of the fixed transfer cam (204792). To avoid this, the selector lever is brought out of action in two stages by means of a step on that end of it which makes contact with the pins of the pattern drum. This step is also used to prevent any 'overlap' in the pattern, i.e., the last selector which is cammed down by an out-going selector lever is followed (in the next trick) by the first selector to be cammed down by a lever that has just fallen into the cylinder.

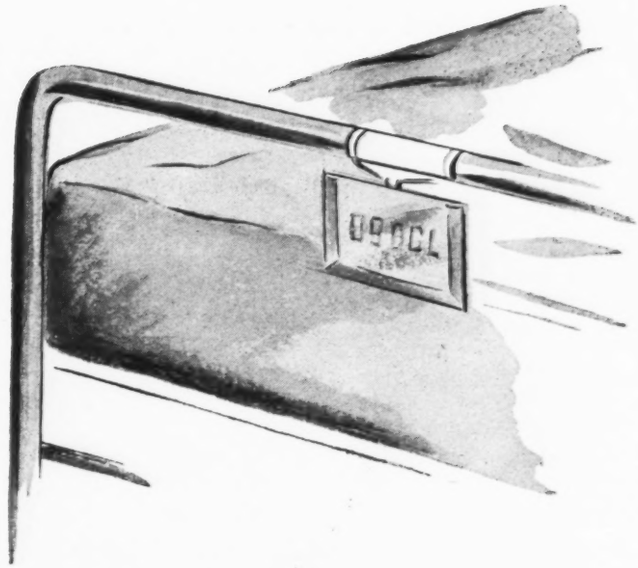
"The selector levers are brought out of action in the following way:

"As the pattern drum is racked around, the pins mount the first step on those selector levers which until then have been right up to the cylinder, and thus the levers are half withdrawn. At the point on the cylinder where this occurs, a group of long butts is placed, so that the selectors having these long butts continue to ride down the selector levers which are in the 'half out' position. While the 'outgoing' levers are still on the first step, the selector levers which are to come into action are allowed to fall onto the cylinder. Thus, by placing additional long butts in the cylinder until the 'ingoing' levers have fallen in, it is possible to avoid any overlap whatever. After the new levers have fallen in, the pins in the pattern drum mount the second step of the 'outgoing' selector levers, causing them to be lifted right out of action."

Special Selector Levers

In the illustration on the next page (130) is shown the arrangement of selector butts in the upper cylinder. This is shown in order to make clear the following discussion, by the machine manufacturer, of the location and use of the special selector levers:

"Selector levers Nos. 8, 9, 10 and 11 on 48-gauge machines and levers Nos. 9 and 10 on coarse gauge machines are made with a longer second step at that end of them which makes contact with the pins in the pattern drum. This longer step will cause the



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Cotton – for bandages, sheets, operating gowns and uniforms. That's part of our contribution to war needs; these are some of the grim necessities for which we have sacrificed production of civilian goods, foregone civilian profits. *Is this sacrifice enough? Does that and our wholehearted participation in all programs of conversion, production expansion, conservation and materials recovery end our obligation?* This war is not won yet! There's plenty more to do. *Opportunities right now?* The American Red Cross will be asking for your financial support. Blood donors are needed urgently to contribute to the Blood Bank. Help – generously – and you'll help save lives of fighting men who are making the greatest sacrifice of all.

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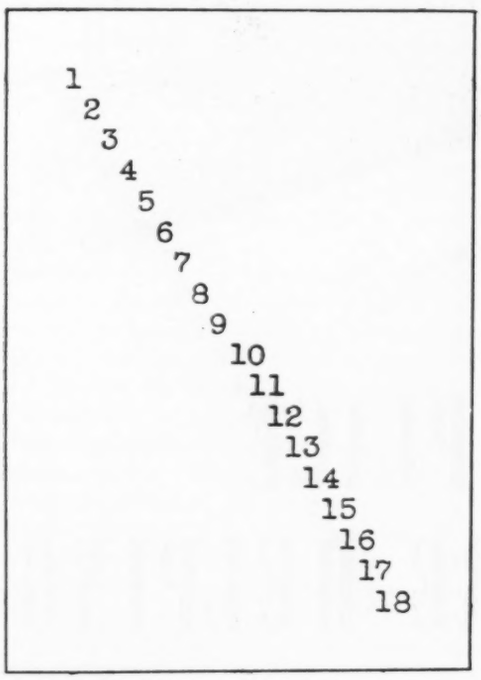
levers to fall onto the cylinder later than the ordinary levers. This occurs of course when a pin in the pattern drum is being racked from under the step in the lever.

Explanation of Uses of Special Levers

"Taking a straight line of V set-up of 18 selectors as an example, it will be seen that if the pattern drum racking cam were set to allow all the selector levers to fall onto the cylinder at the vertical line passing through No. 9 butt position, No. 8 lever would be too



close to No. 8 position butt to be able to fall in safely in front of it. This would apply in a lesser degree to No. 7 lever.

"If, however, all the selector levers, except Nos. 9 and 10, fall onto the cylinder in a vertical line passing through No. 11 butt position (Nos. 9 and 10 still falling on the No. 9 butt position because of their longer second step), Nos. 7 and 8 levers, which were unsafe before, will now fall onto the cylinder two tricks earlier and will therefore be able to reach the cylinder safely in front of their corresponding butts.

"The foregoing example refers to a 36-gauge machine. On a finer gauge machine more delayed levers will be necessary and Nos. 8 and 11 are added to Nos. 9 and 10. In this case, the ordinary levers will fall on No. 12 butt position and the special levers on No. 8.

"On a set-up using less than 18 selector butt positions, the pattern is set up to bring the delayed levers into the center of the selector butt positions used, that is, if setting out a pattern using say 6 selectors, the butt positions used would be Nos. 7, 8, 9, 10, 11 and 12.

Arrangement of Long Butts

"The last long butt selector to be placed in the cylinder is that on which the delayed selector lever falls. In the example given, the last long butt would be a No. 9 in the case of a 36-gauge machine or a No. 8 if on a finer gauge. If, however, the line of selectors were to be placed in the opposite direction, i.e., downward from right to left, the last long butt would be No. 10 if on a 36-gauge machine, or a No. 11 if on a 48-gauge machine.

Corrector Mechanism for the Pattern Drum

"If it is required to alter the length of the sock, any number of links may be taken out of, or added to, the leg or foot, the pattern drum returning automatically to a fixed position before the start of the next sock. If this were not the case, a whole pattern would need to be taken from or added to the sock. The mechanism enabling this to be done works as follows:

"In order to stop the pattern drum racking, a selector drum pawl lower lever (204600) is placed in back of the tail of the selector drum racking pawl (204447) when this racking pawl is in its forwardmost position, causing the racking pawl to idle. The lever doing this is, however, mastered by a ring (fitted under the pattern drum rack wheel) which has a gap in it. Riding on this ring is the selector drum control lever (204598) which, when riding on the ring, prevents the selector control lever from acting on the pawl. When the lever falls into the gap in the ring, the selector control lever is allowed to operate and stop the pattern drum racking. The pattern drum must of course stop as soon as the machine goes into the heel, irrespective of the gap. To do this, a second selector drum upper control lever (204621) working from the heel bolt control, by means of a short cable, stops the racking pawl by placing the upper control lever in back of it, causing it to idle through the heel and drop away at the finish of the heel, allowing the racking pawl to rack again.

"The selector levers are brought out of action when going into the heel and toe (irrespective of the position of the pattern drum) by means of cams placed on the front control drum.

"A cam (204825) is fitted above the top cylinder door to prevent a selector levelling butt being pushed above the levelling cam (204823) when putting a slider into the top cylinder.

The Start of a New Sock

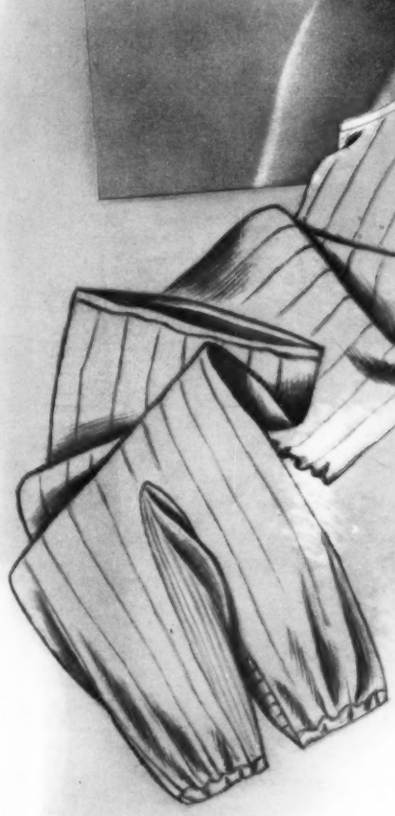
"When a new sock is started, the machine should be turned, or run, through its racks to the start position. Otherwise, if the machine is racked straight from the start, from the leg or foot, a needle may be left floating from the up transfer and a slider will catch on the fixed transfer cam in the top cam box.

"In the case of a press-off, however, the machine should be racked straight to the start, and any sliders left half way up or down in the bottom or top cylinders respectively should be pushed back to their original positions. The rib needle latches should then be opened and the top transfer cam pushed right in until all needles have been transferred to the bottom cylinder."

In the next article in this series, we shall discuss the double patterning device.

K. O. METZ

(This series is nearing completion. If sufficient demand is indicated, we may reprint all of these Komet and Links-and-Links articles in a booklet. Readers interested in securing them in that form are urged to so advise us promptly.—The Editor.)



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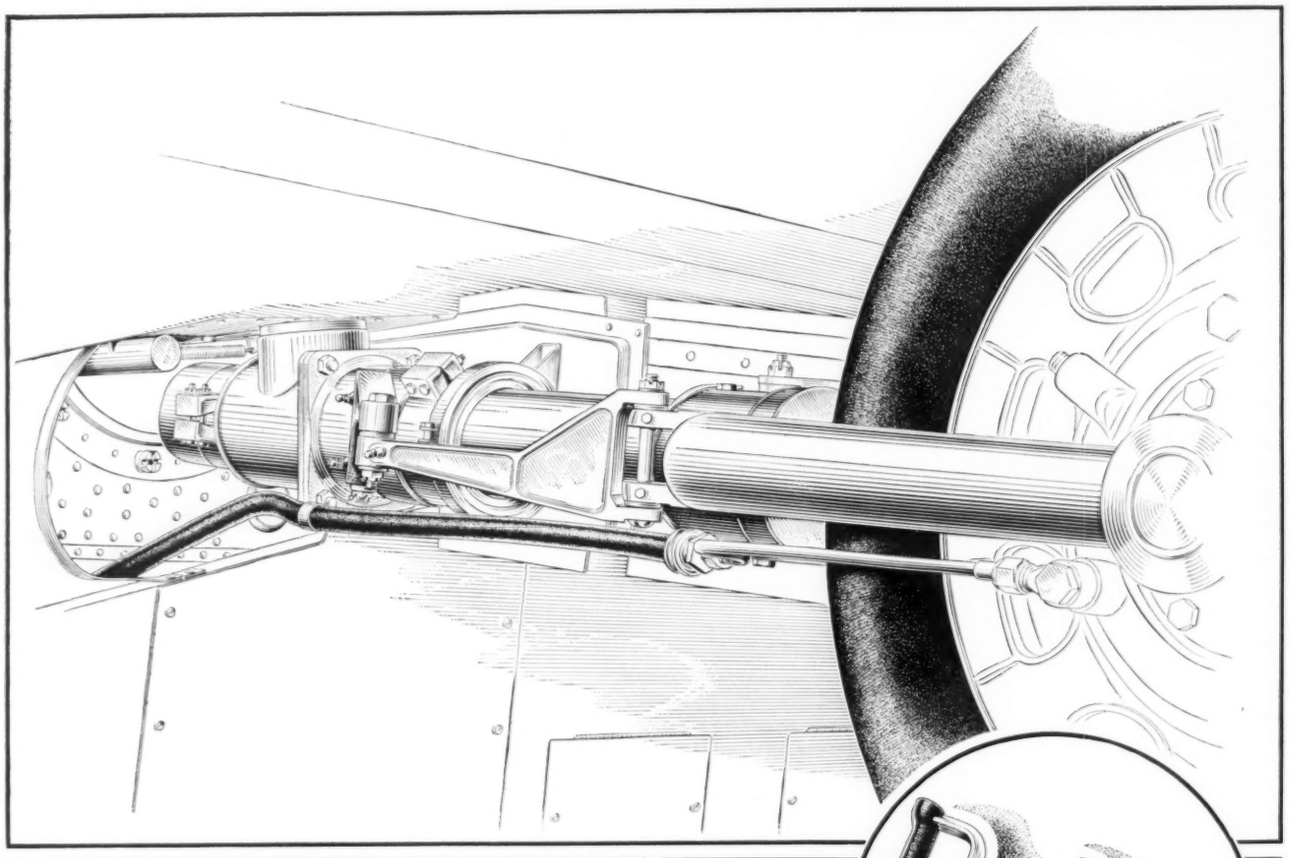

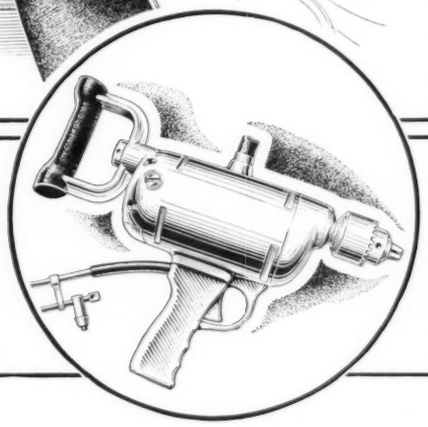

what the Landing Gear Learned from the Portable Drill

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AND TOMORROW'S TRENDS

TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

Smaller Hosiery Shipments Reflect Curtailment in Industry—WPB Supervises Cut in Number of Underwear Styles—More Carded Yarns for Civilian Underwear—Hosiery Industry Names Style Simplification Groups—Retail Hose Volume Shows Wide Gain Over 1941—Heavy Purchases of Underwear by Army and Navy

Philadelphia, December 16, 1942

IN OCTOBER shipments of hosiery of all types registered a sharp drop, these being off more than 13 per cent compared with the same month a year previous. In view of this, shipments for the year also make a less favorable comparison with 1941 and for the ten months these were off almost 3 per cent compared with the same period in the previous year whereas in the first nine months these were off only about 1.5 per cent. During the period women's full-fashioned shipments were off about 20 per cent, which is less than had been predicted earlier in the year when Government experts felt that the drop would reach 40 per cent. One of the bright spots this year has been anklets, where 1942 shipments top those of the previous year by more than 13 per cent, these being especially active in war industry centers where they are extensively worn by women workers. Underwear demand has picked up due to larger military orders with the Navy reported in the market for about 20,000,000 cotton summer shirts for delivery well through 1944. There are also good prospects that considerable knit goods will be required for lease-lend shipments to countries that our army is occupying such as French Africa so that the outlook is for capacity operations as far ahead as one can see.

Full-Fashioned

With shipments of hosiery tapering off there are indications that holiday volume will be affected unfavorably by lack of sufficient supplies. In recent weeks some of the largest retail sections of the country have been reporting retail hose volume 74 per cent larger than the same time a year previous. This creates a serious problem for retailer and wholesaler and that is to keep up stocks in the face of heavy consumer demands. Under such conditions in the other war, prices would have gone up so high as to keep retail interest down but at the present time there are hose ceilings that have been set by the OPA above which retailers cannot go, so that instead of this supply situation being reflected, it is not. During October total hose shipments were off 13 per cent while women's full-fashioned showed a drop of almost 9 per cent and for the first ten months of the year the full-fashioned end showed a drop in shipments of about 20 per cent. In the early part of this year spokesmen for the various government agencies regulating the industry predicted that the full-fashioned curtailment would go to about 40 per cent and while the last two months may show a stronger trend in this direction, most feel that the 40 per cent mark will not be struck this year but possibly in the coming year when the war tightens all industries more so far as normal operations are concerned. Setting of ceilings on silk and nylon hosiery have resulted in substantial savings for consumers because some retailers had been charging all the consumer would pay for such lines and in instances reductions were up to $1 per pair when ceiling levels went into effect. The government in the months has placed orders for both cotton and rayon full-fashioned hose for the Women's Army Auxiliary Corps and the business was eagerly sought by knitters with indications that such procurements will be much larger as the corps is expanded in size over the coming months.

Half-Hose

Although demand has been less active in recent weeks, shipments of half-hose during the first ten months was a bright spot in the hosiery field, registering a gain of 2.5 per cent in a period in which most branches of the industry were showing smaller shipments. In October shipments of these lines were more than 12 per cent under the same month a year previous, reflecting less purchasing this year by the armed forces in such lines. But in the last few weeks this has changed and exceptionally large amounts of half-hose of wool and also the all-cotton types are to be bought. It is reported at present the Navy is asking for bids on more than 20,000,000 pairs of cotton and the Army, 18,000,000 pairs which cannot help but be reflected in shipment data shortly. The movement of slacks or the shorter socks has been good this year, the first ten months showing a gain of almost 10 per cent over the corresponding period of a year previous. There was also a gain of more than 9 per cent in the movement in this period of athletic socks.

Seamless

Women's seamless shipments have been smaller this year than last by about 6 per cent but wide gains have been made in cotton and rayon types at the expense of silk. A poor spot this year has been the campus length seamless which a year ago was booming. In the first ten months of this year, shipments of this type garment fell almost 60 per cent compared with the same 1941 months and in October shipments were off almost 90 per cent compared with the same month a year previous. One of the outstanding developments in the seamless women's field is the large gain in anklet sales in the war industries where the increasing number of women workers all seem to prefer to wear anklets with their slack trousers, just as do the men. This is one reason why in the first ten months of this year shipments of anklets gained 13.4 per cent over the first ten 1941 months.

Underwear

Although production and shipments of underwear in the last month covered by Government data were smaller than the same month a year previous, this condition already has or is about to change due to the heavy recent ordering of underwear for the armed forces. Most of this large Army and Navy buying has been in the last quarter of the year. Production and shipments of knit underwear in October showed a moderate increase compared with the previous month but were smaller than in October, 1941, according to data prepared by the Depart-

FORECAST

(Opinion submitted by COTTON's market correspondent)

Philadelphia, December 16, 1942

ADDITIONAL EVIDENCE has come in the last month that this is an entirely different type of war and also that the post-war period cannot be yardsticked with what transpired a quarter of a century ago when the Armistice came. Just as these developments are different, so the post-war position of business, and especially textiles, in the United States will be entirely changed from that after the termination of World War No. 1. Following our troops into North Africa it has been announced that the United States will follow its soldiers up with relief to the civilian population in such occupied lands and included in this relief will be large-scale movements of textiles, mainly, in this particular case, cottons.

The President has named Governor Lehman of New York to supervise this lease-lend aid to civilian populations and its effects may be so great from now on, including the post-war period, that it will almost revolutionize the textile industry. For example, there have been trade reports that lease-lend may take at last a billion yards of cotton textiles next year to say nothing of other textiles, such as hosiery and underwear. If this is our policy there is no question but that from now on the textile industry will be pressed more than in the past year to turn out all that is demanded of it.

Under such conditions textile manufacturers would be assured of record volume of business for years ahead, war or no war, so that fears of a post-war depression such as we had for a time after the other World War would not be a factor. Manufacturers would be pressed for larger volume than they could handle with goods to be paid for by the Government, meaning that small profits would be had on a great turnover. In time, it is expected that the sub-normal countries would raise their standards so that they could pay us in some other merchandise or raw material, thereby permitting this country to continue its present record production rate and full employment.

There are some in the industry who feel such a policy is not going to work out over a long period in actual practice. It was apparent at a recent session of the National Association of Manufacturers when one speaker said he was not in favor of "a bottle of American milk for every Hottentot." In other words, many feel that the American standards should not be lowered to bring all the downtrodden of the world up to about our level. They feel such a policy will shortly bankrupt this nation as prolonged expenditures at the current rate would do. These are vital matters for business including textile manufacturers and their development or counteraction in the coming months should be watched because they vitally affect every one of us.

Continued evidence is at hand that a long reign of unopposed New Deal theories came to an end with the last election. The new Congress will furnish more opposition to the theories of the left than any time since the present Administration took office. This cannot help but exert great influence on Washington and in turn have the effect of eliminating many radical proposals but even so there is no chance that the "old days" for business will return. The thing is to make coming changes as practical as possible and in line with sound business principles.

ment of Commerce. New orders that month were smaller than either September, 1942, or October, 1941. The extent of the Government buying of underwear may be seen from the following data which cover a two-month period late in the year: Army wanted 13,500,000 heavy wool type; 1,500,000 war-aid wool type; 4,700,000 special cotton type; 15,000,000 light summer knit shirts and same amount of woven shorts with actual orders said to total about 18,000,000 of each. Navy bought 10,000,000 cotton shirts and reports are that it is now in the market for double that amount, wanted for far-ahead shipments. These figures are impressive and indicate that with such buying for our own forces together with very large lease-lending of textiles, the civilian trade may have a more difficult time of it in 1943 than this year to obtain goods although many have complained this year about small allocations for civilians. One thing that will help is to cut down the number of styles and the War Production Board in co-operation with the industry is tackling the problem now, with hopes that concrete steps will be achieved shortly which would be in addition to the considerable work along the same lines already accomplished by the industry itself. This will permit manufacturing economies that will facilitate larger production of the wanted types but even so most agree the outlook is for smaller civilian allocations and then in carded quality instead of combed, which is needed by the Government.

OPA Ceiling for Spun Nylon Hose

Ceiling prices for additional types of women's nylon hosiery, other than the standard constructions for which prices were set in the recent nylon hosiery regulation, were announced by the Office of Price Administration. These prices are for stockings that recently have appeared on the market under the name of nylon although they are neither sheer hosiery nor made of single filament nylon yarn. Types covered by this action are nylon hosiery made of combination, spun or blended nylon yarns. Retailers, wholesalers and manufacturers will be enabled to sell these types of stockings without the necessity of making individual applications for specific prices. Maximum prices for these stockings are determined by the highest price charged in March 1942; however, in no event may the maximum price exceed the prices set forth in tables covering retail, wholesale and manufacturing levels.

For retailers the specific maximum selling price for stockings of 100 per cent spun nylon, except that re-inforcements and decorations may be of another material, is $1.85 per pair for first quality, $1.15 for irregulars and 79 cents for seconds. For combination and blended nylon hosiery the retail ceiling for first quality is $1.50 per pair, for irregulars $1.00 and for seconds 75 cents. A combination yarn is one made from continuous filament nylon yarn which has been combined with some other yarn such as cotton, silk, rayon or wool. A blend is a yarn made from a combination of short lengths of nylon waste fiber spun in combination with rayon, cotton or other fiber. In response to requests from retailers for prices for thirds and fourths of continuous filament nylon hosiery, OPA has now provided specific prices for such sub-standard qualities. For instance, OPA has now established a ceiling for thirds of 85 cents or fourths of 40 cents per pair.

Silk Hosiery Placed Under Own Ceiling

OPA late last month announced specific maximum prices for sales of women's silk hose. Prices established for sales to ultimate consumers by Regulation 274, effective December 3, range from 69 cents per pair for the coarsest first quality circular knit silk hosiery up to $1.65 for the first quality full-fashioned style. For irregulars, ceilings range from 60 cents to $1.50; for seconds from 50 cents to $1.25; and for thirds from 35 cents to 80 cents. Prices for women's silk hosiery were formerly controlled by General Maximum Price Regulation. The present action although supplanting individual marked ceilings with specific maximums, will not change the general average of retail prices, according to OPA. Several shoe stores and others that sell hosiery as a side line at low

prices, may benefit from the new ceilings while some specialty shops selling at high March levels may have to reduce prices.

Wholesale prices under the new order will be lower than March levels since many jobbers raised prices before GMPR became effective. With both nylon and silk hosiery now under specific ceilings it is not expected to be long before a rayon hosiery price schedule will be issued. For the most commonly worn styles of first quality three and four thread, 42 to 48-gauge full-fashioned, silk leg stockings, retail ceilings of $1.00 and $1.25 per pair were fixed. Stockings in these grades have been selling at a wide range of marked ceiling prices which for individual stores have been as low as 79 cents and as high as $1.95. So that shoppers will be fully aware of the quality and price of the silk stockings offered for sale, the Regulation requires that each pair shall have attached to it a tag or other marker bearing the words "Ceiling Price" or "Our Ceiling", together with the maximum price as well as information on its construction. For example, if a stocking is full-fashioned the marker must so state.

Hose Shipments Show Diminishing Trend

October shipments of all types of hosiery were 13 per cent under the same month a year previous and this important drop was instrumental in bringing about a drop of 2.8 per cent in total shipments for the first ten months of the year compared with the same period a year previous. During the first ten months of this year shipments of women's full-fashioned hosiery declined approximately 20 per cent which is considerably less than was predicted early this year by Government officials who expected by this time that full fashioned shipments would be off about 40 per cent. This may develop in the coming year if the yarn situation becomes more difficult and if the continuing difficulty of manufacturers to hold their employees does not improve. Shipments of women's seamless were more than 6 per cent off so far this year and an important factor in this end of the market was the sharp drop in the popularity of knee length and campus type hose. For example, sales of the campus and knee length types in October were 89 per cent smaller than the same month in 1941. Shipments of half-hose and slacks gained 2½ per cent in the first ten months, aided by a substantial gain in shipments of slack or the short type socks which gained 10 per cent. A feature of the hosiery industry at present is the popularity of anklets especially in the war industry centers where large numbers of women workers prefer to wear anklets instead of regular length hosiery under their slacks.

Hose Industry Studies Style Simplifications

Five separate committees representing the major branches of the hosiery industry have been named by the National Association of Hosiery Manufacturers to develop a simplified line of constructions to be submitted to authorities in Washington. They are as follows:

Bundle Goods Committee—James M. Beverley, chairman, Ballston-Stillwater Knitting Co., Inc.; J. B. Glasner, Rockford Mitten & Hosiery Co.; T. J. Floden, Nelson Knitting Co.; J. Caleb Smith, Seneca Knitting Mills, Inc.; W. H. Ziock, Jr., Portage Hosiery Co.; B. D. Banks, Grantville Mills.

Children's and Infants' Committee—J. Lee Bausher, chairman, Infants Socks, Inc.; C. B. Conway, Danville Knitting Mills; F. G. Henley, W. B. Davis & Son, Inc.; Leon S. Herbert, Herbert Hosiery Mills; Herbert Jaques, Hub Hosiery Mills, Inc.; Harry Kramer, Trimfit Hosiery Mill; Dan May, May Hosiery Mills; Hugh L. Merritt, Renfro Hosiery Mills Co.; R. P. Shapard, Jr., Spalding Knitting Mills; George C. Szabo, Holston Manufacturing Co.

Half-Hose Committee—R. O. Huffman, chairman, Drexel Knitting Mills Co.; Clarence G. Burton, Lynchburg Hosiery Mills; J. J. Corrigan, Slane Hosiery Mills, Inc.; P. W. Eshelman, Wilkes Hosiery Mills Co.; W. W. Freschl, Holeproof Hosiery Co.; E. C. Jamison, Jos. Black & Sons Co.; J. E. Millis, Adams-Millis Corporation; W. W. Neal, Sr., Marion Hosiery Mills; J. W. Paradine, The Nolde & Horst Co.; H. W. Simmons, Interwoven Stocking Co.; J. L. Turbidy, Rome Hosiery Mills.

Women's Full-Fashioned Committee—John J. Kronenberg, chairman, Wayne Knitting Mills; Henry T. Bryan, Jr., Bryan Hosiery Mills; Andrew J. Doyle, Contour Hosiery Mills; Hugo Hemmerich, Berkshire Knitting Mills; Irving K. Hessberg, Van Raalte Co., Inc.; J. P. Kelly, May McEwen Kaiser Co.; F. B. MacIver, Phoenix Hosiery Co.; William Meyer, Apex Hosiery Co.; Marshall V. Moss, No Mend Hosiery, Inc.; Waldemar Wallner, Wallner Silk Hosiery Mills.

Women's Seamless Committee—James N. Weeks, chairman, Hanes Hosiery Mills Co.; Fred M. Fisher, Fisher Hosiery Co., Inc.; Hugh M. Grey, Concord Knitting Co.; Luke A. Lutz, Wm. G. Leininger Knitting Co., Inc.; R. S. Mann, Newnan Hosiery Mills, Inc.; Frank McCrary, Acme Hosiery Mills, Inc.; Millard Walker, Harriman Hosiery Mills.

Ingrain Silk Hose Under OPA Ceiling

OPA within the last week placed ceilings over ingrain silk hosiery prices of manufacturers, wholesalers and retailers effective at once. Manufacturers' ceilings are $14.50 a dozen on 45-gauge and lower and $17.50 a dozen on 48-gauge and higher. Wholesale ceilings are $15.95 on 45-gauge and lower and $19.25 on 48-gauge and higher. Retail ceilings are $1.95 a pair on 45-gauge and lower; $2.35 on 48-gauge and higher, all being first quality prices. Irregulars quoted by manufacturers can be no higher than $10.90 and $13.10 a dozen for the two classifications. Wholesalers' maxima are $12.00 and $14.40 respectively. Retailers' maxima are $1.45 and $1.75 a pair respectively. Seconds at the mill can be no higher than $7.25 and $8.75 a dozen; at wholesale, $8.00 and $9.65 and at retail $1.00 and $1.20 a pair.

Hose Federation Says Manpower Shortage Acute

American Federation of Hosiery Workers in its year-end review of the industry says that the draft and voluntary enlistments together with the shifting of workers to war plants and the withdrawal of women from this industry have created a labor shortage in both union and non-union sections of the industry. It pointed out that the total work force in the full-fashioned industry was not more than 62,000 workers as of October 1942 compared with some 92,000 men and women in the industry in 1940. These 62,000 workers produced 3,100,000 dozens in October this year compared with 3,330,000 dozens per month produced by the 92,000 in 1940. The federation says that the third shift is getting to be a "dodo" in the hosiery industry. Many former three-shift plants are finding it almost impossible to maintain second-shift operations because of the manpower loss, the report states. For a few mills, the union says, the pressure of manpower shortage has been met through the medium of overtime operation and the switch over to back-rack knitting has met some of the shortage in labor and materials.

Southern mills have been experimenting with double machine operation and girl helpers, the union points out. In other shops girls are being used as single machine operators with a knitter serving as needleman over a group. Other southern mills have found it necessary to advertise for knitters in Philadelphia and Reading newspapers because unemployed girls were not available in their own locality. Most manufacturers are waiting to see the effect of the reduction in yarn supply before proceeding to discuss definite plans for overcoming their own particular manpower situation. The federation predicts that increased military uses for rayon yarn will no doubt cut further into the available supply for the hosiery industry since the allocation of yarns to hosiery by the Government is based upon yarn available for all uses after military and Lease-Lend requirement has been met. The union says the yarn supply question was rather satisfactorily handled by the Government as well as facilitated by the ingenuity of management in making such yarns usable for hosiery.

Underwear Style Cut Is Studied

A cut of as much as 60 per cent is seen as possible in the number of underwear styles in the knit cotton and wool division due to the war. Even before the War Production Board began its discussions with the industry

relative to this matter it is known that underwear manufacturers themselves had made a radical cut in styles of over 40 per cent due to reasons developing from the war, largely accomplished through the efforts of the Underwear Institute. It is known that the different committees of the industry reported on style simplification to the Industry Advisory Committee which passed its findings on to the WPB. The recommendations in the men's knit cotton union suits, in the heavy cotton ribs, were that there should be two weights allowed in the four models; in balbriggan suits two weights are suggested in three models. In the men's wool-spun end of the industry the recommendation was understood to call for two weights in the flat knit, part-wool with two models and three wool percentages. In the ribbed wool-spun, two weights are suggested in two models and four wool percentages. The committee also stands by the 10 per cent ribbed part-wool style and recommends that the ribbed wools include three weights, in two models and four wool percentages. Flat fleeces would include four weights in one model.

Blended Sweaters in Price Probe

OPA announced at the end of November that it was launching an investigation of pricing methods for sweaters made from the new blended yarns as a result of complaints filed with it that manufacturers in some instances have been charging higher prices than warranted for such products. Blended yarn sweaters are those in which wool has been mixed with other fibers such as rayon and cotton, in spinning the yarn or knitting the sweater. OPA states that it has received reports indicating that such manufacturers are charging higher prices for sweaters made from wool products blended with rayon or cotton than they did for all-wool sweaters manufactured last March. OPA pointed out the cost of blended yarn to manufacturers is less than for all-wool yarns. Since a sweater made of blended yarns is not similar to an all-wool sweater, OPA has ruled that a seller's ceiling price for an all-wool article cannot be used to establish his ceiling for the new blended product.

Back-Rack Rates Set at Parley

A uniform method for the calculation of knitting rates on back-rack hosiery styles has been adopted by the Full-Fashioned Hosiery Manufacturers of America, Inc., and the American Federation of Hosiery Workers, resulting from negotiations that began last November 17. The long delay in arriving at a formula was due to wide variations in production results and the difference in method used in back-rack knitting. The basis for calculation is the formula advanced April 20, 1942, in negotiations at Chicago. It was decided also that in case any unusual or revolutionary changes take place in back-rack styles these rates might not be applicable.

Military Buying of Knit Goods Heavier

The Navy Department has recently been inquiring of underwear manufacturers for a very large quantity of lightweight undershirts covering the short sleeve shirt for delivery almost to the middle of 1944. It is reported that the quantity being sought is slightly in excess of 20,000,000 garments. The buying on such a large scale and far into the future is due to a decision of the Navy to be fully covered for a long way ahead on an important apparel. Total Government purchases of underwear during the last two months amount to approximately 70,000,000 garments. Considering that the actual production of the whole industry for 1941 in men's knit and woven underwear was about 32,000,000 dozen garments, it is evident that this two months Government business alone was 18 per cent of that year's total. This two-months' Government underwear business in round figures is divided as follows: Army, 13,500,000 heavy wool; 1,500,000 lease-lend wool; 4,700,000 special cotton; 15,000,000 light undershirts; 15,000,000 woven shorts and 2,000,000 lease-lend cotton. Navy, 3,375,000 nainsook drawers; 2,000,000 part wool; 100,000 special wool; 10,100,000 light undershirts. Marine Corps, about 2,000,000 light undershirts.

Anklet Sales Boom in War Plant Centers

With women war workers buying anklets in large quantities, department stores and specialty shops in defense centers are continuing to increase stocks of this type merchandise. At the same time, most hosiery buyers in these outlets expressed the opinion that increased demand for anklets is not holding back sales of rayon full-length stockings. Buyers also state that women war workers mainly desire straight elastic top anklets. On the other hand college and school girls have increased the unit sales of turned cuff anklets. The leading type of anklets sold to war workers today has been mercerized cotton with elastic tops, selling at five pairs for $1.00 and 19 to 39 cents per pair. This activity in anklets is reflected in hosiery shipments, as reported by the National Association of Hosiery Manufacturers. Anklet shipments for the first ten months were about 13½ per cent in excess of the same months a year previous.

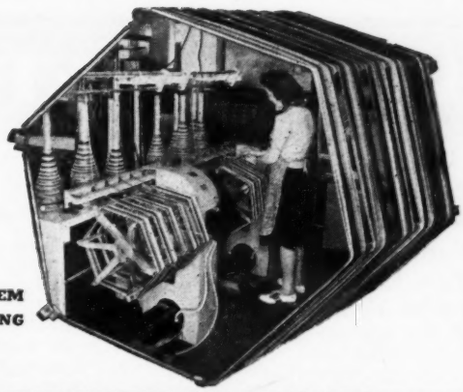
Retail Hose Sales Show Wide Gains

Retailers and wholesalers of women's hosiery are concerned with the critical situation in securing enough merchandise with which to do business in the immediate future. Retail hosiery business in women's numbers has been running at an unexpected high rate all this fall just at the time when the chances of keeping up stocks are more uncertain than ever before. The Federal Reserve report on sales of women's and children's hosiery with department stores this October for the New York district, shows a large gain in dollar volume of 74 per cent over a year ago. Sections such as Detroit and other war centers recorded similar impressive percentage gains. Manufacturers have been refusing to accept new orders and when they get ready to put lines back on sale usually allot merchandise more rigidly than ever.

Urlaub Now Consultant

George A. Urlaub, who resigned last month as head of the knit goods section of the Office of Price Administration, has announced his return to textile consulting practice, with offices at 468 Fourth Avenue, New York City, and 305 Hamilton Street, N. W., Washington, D. C.

Mr. Urlaub states he has been retained by several factors in the knitting industry to continue to work for the acceptance of quality factors in their products to the end that maximum utility to the consumer shall result. In women's hosiery, especially at this time, these factors feel that the best interests of the country as a whole in the full-fashioned hosiery, throwing and rayon producing industries specifically, can best be served by so processing the millions of pounds of rayon made available to the hosiery industry that the resultant stockings shall possess the maximum of wear and money value for the general public. They have retained Mr. Urlaub to continue to advocate utilization of the heavier deniers, proper gauge for each denier, the higher twists used commercially today, and the proper quality construction throughout. Mr. Urlaub advocated these objectives first immediately after the silk freezing order became effective and continuously since. He will continue to remain available in Washington for consultation by Government bureaus on these and related problems.



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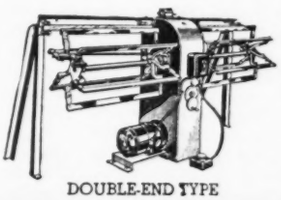

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TRENDS—YARN MARKETS

Sales Cotton Yarn Spinners Now Well Sold through First 1943 Quarter—Military Requirements Large Factor in All Yarn Markets—Armed Forces Take More Rayon Yarns—Worsted Spinners More Active on Military and Blend Yarn Orders

Philadelphia, December 16, 1942

BUYING OF sales cotton yarns has been heavy over the last month, sellers reporting the best run of new business this year and in some cases the largest since the first World War. This has resulted in spinners being well sold ahead for the first quarter of next year and some inquiry runs well into 1944 which spinners are not anxious to accept, considering it too far ahead. Prices of all types of cotton yarns are firm at the ceiling in contrast to conditions a few months back when sub-ceiling selling in numerous counts was apparent. There is a large call for rayon yarns for various military fabrics including balloon cloth. With the Government taking more rayon for tire cords the outlook is for much less of the man-made fiber for civilian use during the coming year. Producers of worsted knitting yarns are busier than a couple of months back, making all-wool yarns for military knit goods such as sweaters and selling blend civilian yarns more freely.

Cotton Yarns

Buying of sales cotton yarns during the last month has been as heavy as any time this year and with some concerns it has been the most active period within the last 25 years. Military buying has been a major factor in bringing poundage up to such a high level, the Army and Navy both being in the market for large amounts of fabrics and garments requiring both carded and combed yarns. For example, the Army will open bids later this month on 18,000,000 pairs of mercerized half-hose and the Navy on more than 20,000,000 pairs of the same type socks; in addition bids have been opened during recent weeks on underwear for the armed forces as well as for lease-lend, both of which will take large quantities of cotton yarns. Civilian demand during this period has also been as large as sellers would accept.

This condition is now being reflected in numerous reports from carded as well as combed spinners that they are unable to accept large additional orders for the first quarter of the coming year, it being particularly noticeable in coarse carded ply numbers that are used in the manufacture of cotton duck. These sizes are among the scarcest in the entire field not only because of this large demand which is not entirely satisfied as yet but also because a number of spinning plants since last September have found it impossible to operate profitably under the revised ceiling prices for these counts which reduced them by several cents a pound. The statement has been made in the last few days that the Army would find it much easier to place additional cotton duck business if the OPA ceiling on coarse count carded yarns had not been reduced so drastically that a number of the so-called marginal mills claim that they cannot continue such production and stay in business. The duck yarn situation is also tightened when the tire fabric group was brought back to the production of yarns for tires which formerly were used for making duck.

On December 1, OPA issued an amendment to the cotton yarn ceiling, revising discount and premium provisions applicable to certain types of carded cotton yarns. Among the changes made in this amendment was a method of obtaining premiums for double-carded cotton yarns. While there is a fair-sized group of spinners that make premium quality carded yarns, generally known as super or extra quality, the group comprising double-carded cotton yarns is a small one consisting of only three spinners, which according to OPA is composed of Avondale, Cross and Linn. It is decided under the amendment that the premium that they may charge for double-carded quality is a cent and a half a pound. Spinners of the super or slow carded types are not covered in this last amendment but such producers are able to price their yarns on a premium basis because of their use of premium grades or staples of cotton or for other increases in cost covered in previous OPA regulations.

Another important change made by the last yarn amendment was the modification of the specifications of the cotton content of base-grade yarns to permit the use of cotton grading no lower than Strict Low Middling white if the yarn produced is clean and uniform. It is realized in the trade while this ruling permits the consumption of a slightly lower grade of cotton in base-grade yarns it is known that the OPA has no desire to authorize a general lowering of quality of carded yarns. On the other hand, it is the definite policy of that government agency to maintain quality and at the same time see that demands of the armed forces are adequately met. In view of this it is believed that this provision was inserted in the amendment to permit certain carded spinners that have recently installed new equipment to use this lower grade cotton but to produce yarns of approximately the same quality, which is the result of their more efficient machinery. The last carded yarn amendment also covered discount provisions for yarns made of waste or low grade cotton.

Rayon

The United States production of rayon in 1942 will approximate 625,000,000 pounds, creating a new production record. This predicted volume would compare with an output of 573,000,000 pounds in the previous year and 471,000,000 pounds in 1940. The increase over the last year has been moderate since the industry has not been able to obtain new machinery and equipment, this being a period in which producers could have sold considerably more yarn if it had been available to them. Of the total output about 470,000,000 pounds will consist of continuous filament rayon yarn which compares with 451,000,000 pounds in the previous year or 390,000,000 pounds in 1940. The balance of the production, approximately 155,000,000 pounds, will be rayon staple fiber, the short fibers from which spun rayon yarns and fabrics are made. This year's output of staple fiber will compare with a production of 122,000,000 pounds in 1941 and 81,000,000 pounds in 1940.

A substantial portion of the industry's current production of continuous filament rayon yarn is being used in the manufacture of military equipment or is allocated by Government orders to the hosiery industry and for export to Latin-American countries under the Good Neighbor Policy. The principal military equipment containing rayon includes fragmentation bomb chute, aerial cargo delivery chutes, parachute shroud cord and tapes, self-sealing gasoline tanks and feed lines, electric wire insulation in submarines and other Naval vessels, tanks and planes, officers' uniform lining and Army insignia. The remainder of the filament yarn production and bulk of the output of rayon staple fiber is still available for civilian use. Deliveries of rayon to American mills in November totalled 51,500,000 pounds which compares with 53,700,000 pounds in the previous month or with 50,000,000 in November a year ago. Stocks held by producers at the end of November amounted to 7,800,000 pounds.

Worsted Yarns

Under an order issued December 10 by the War Production Board, worsted production quotas for the next eight months were increased. Under M-73 as amended, effective immediately and covering a period up to July 31 of next year, production of worsted fabrics will be almost 60 per cent more than the rate of output since August, WPB said. Production quotas for fabrics produced on the woolen and other systems remain unchanged. This amendment will prove of considerable help to the industry and worsted knitting yarn spinners report that civilian demand is taking a larger quantity of the so-called blend yarns in which rayon and cotton play an important part. This type sweater has come into such widespread use that the OPA recently announced that it launched an investigation of pricing methods for blended sweaters.

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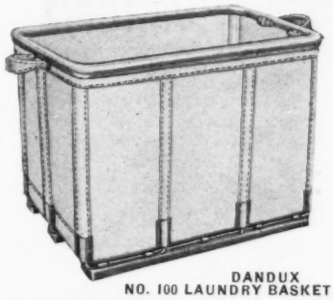

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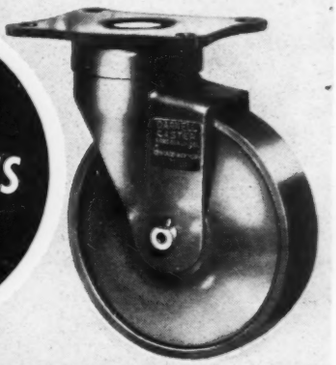

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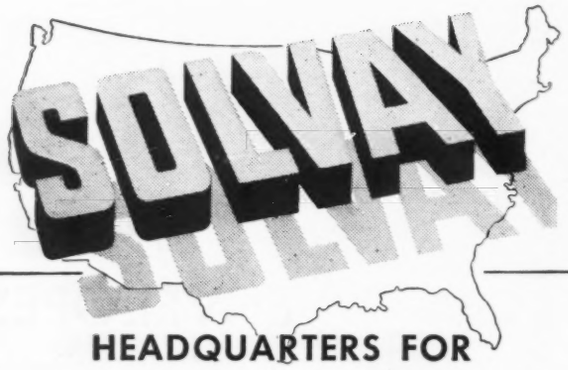

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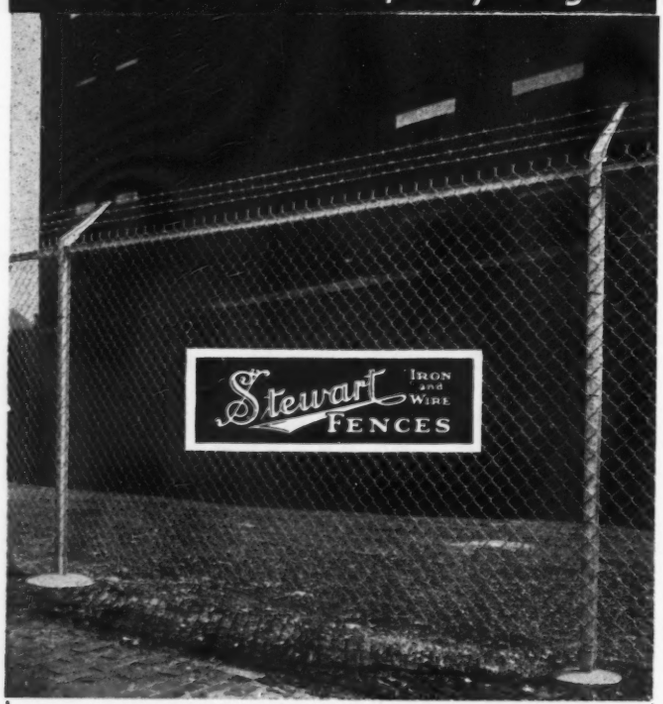

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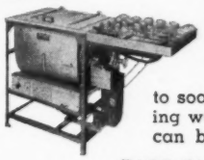

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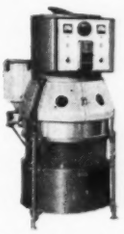

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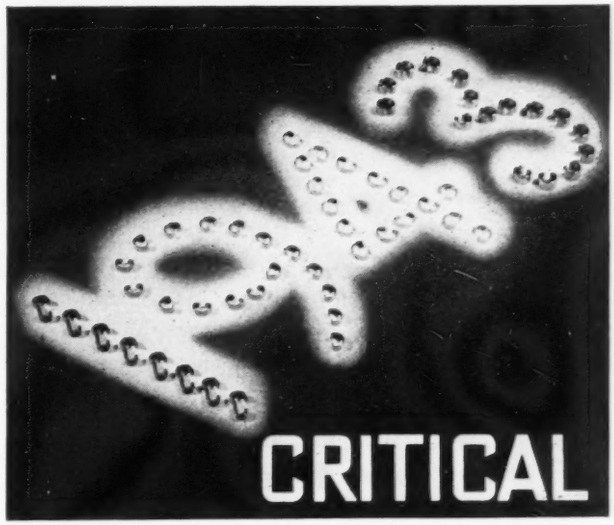

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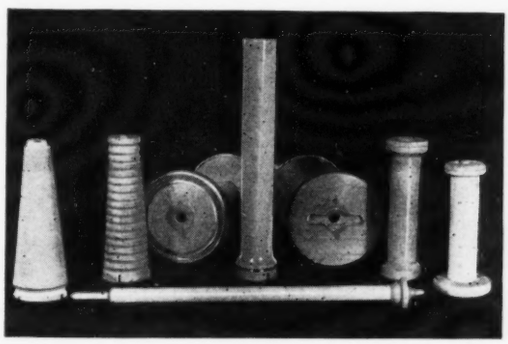

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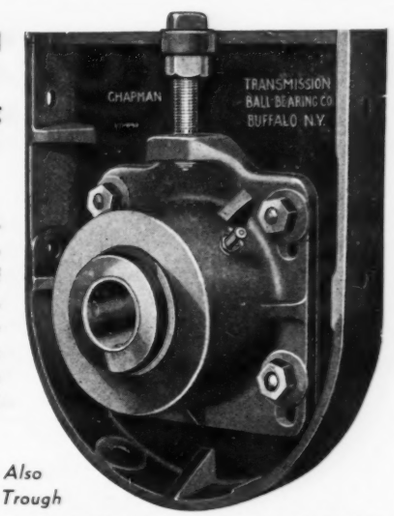

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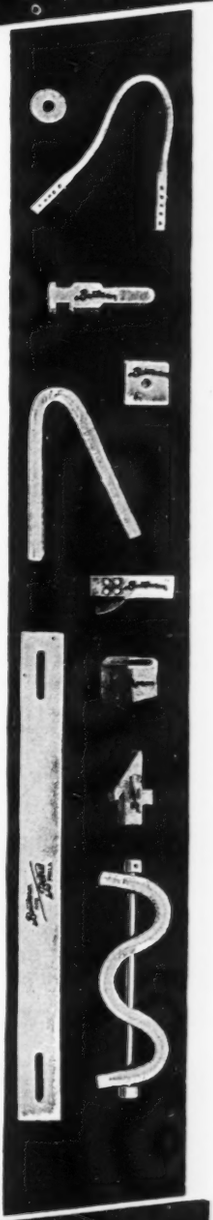

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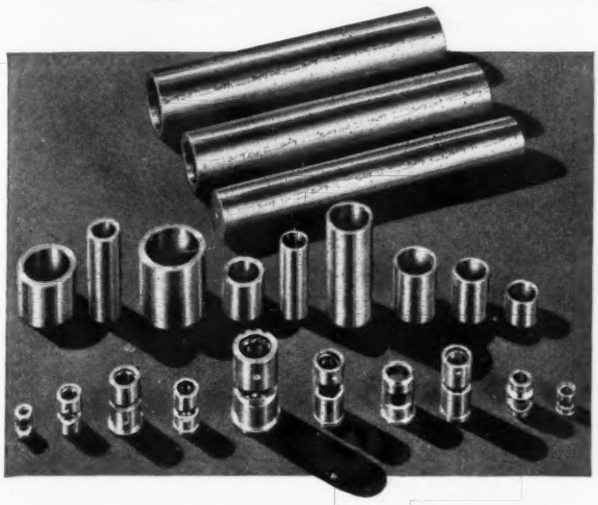

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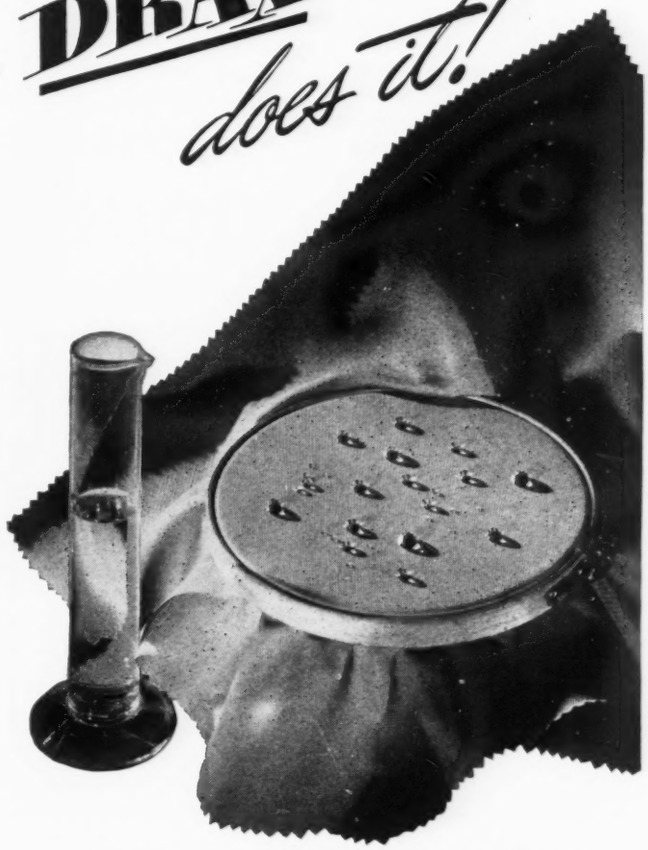

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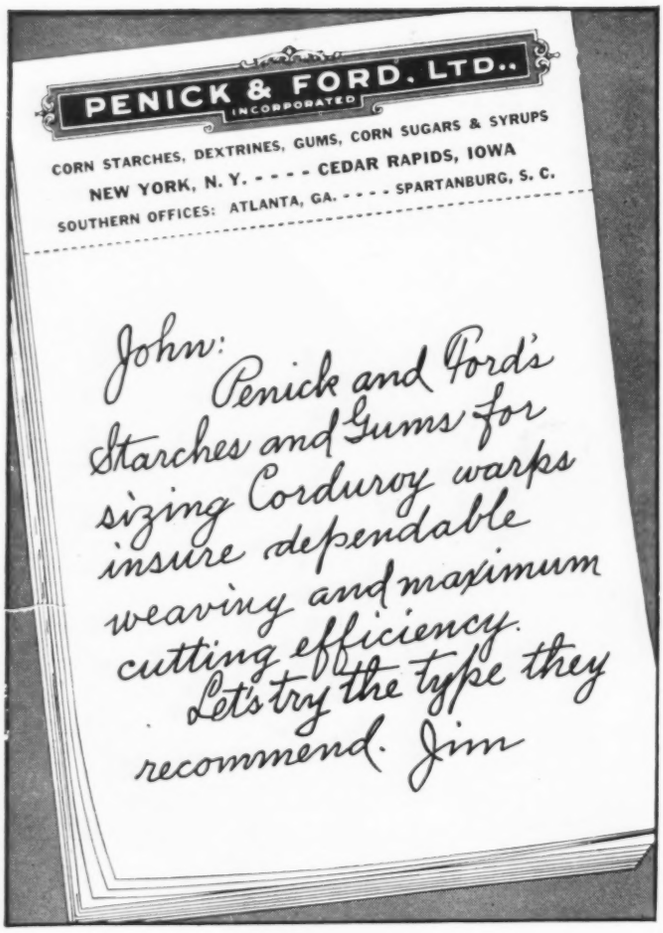
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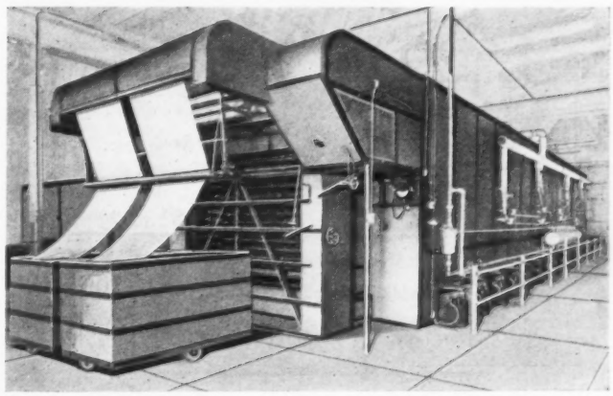

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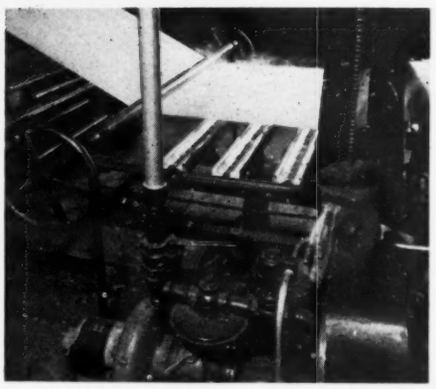

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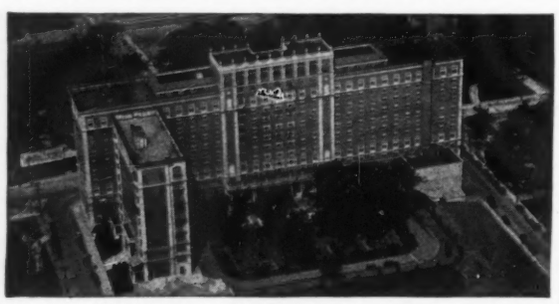

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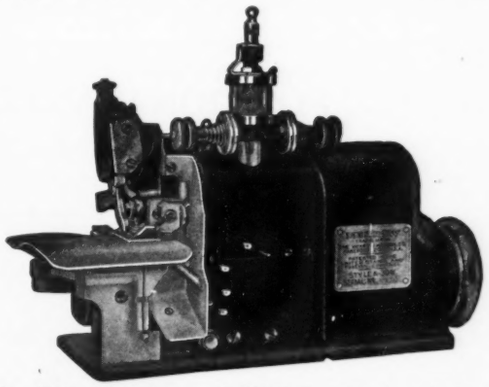

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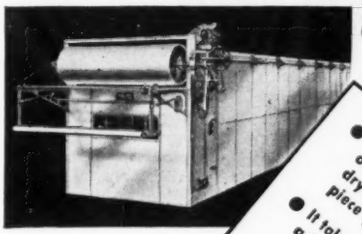

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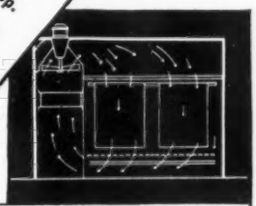
- As the girts on which the goods is suspended move through the dryer, they revolve intermittently, so that no part of the goods is in contact with anything for any appreciable length of time.
- The New Proctor Loop Dryer assures perfectly uniform results and offers unheard-of capacity in a very compact unit.



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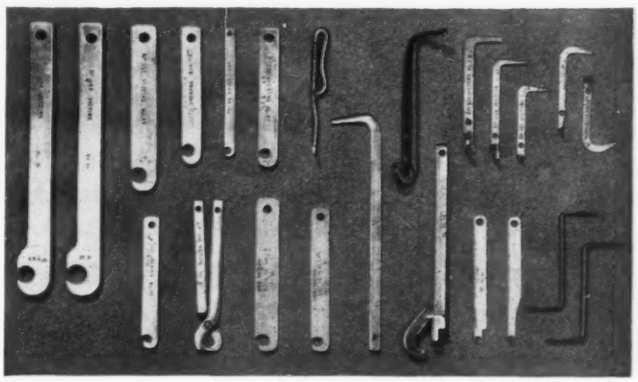


Check Traveler Waste with the Proper "Putting-on" Tools

Traveler waste is no longer a small item of increased operating costs. It is waste of critical metals that are urgently needed for actual weapons of war.

Considerable traveler loss or spoilage occurs when they are being put on the rings. Waste at this point can be greatly reduced by equipping ring spinners and twister tenders with properly designed hooks or wrenches.

The hooks and wrenches above were designed by Victor for applying Horizontal Travelers. They are shown, together with many other styles for Vertical Travelers, in the Victor Wrench Circular. Any of these tools may be copied in your own machine shop with our full permission.

Be sure to keep a copy of the Victor Wrench Circular on hand. And for any help you need in getting the most hours of service life from travelers on *your* spinning or twisting, ask a Victor representative.

INSTRUCTIONS FOR USE of the more popular wrench styles are given in the Victor Wrench Circular. For special wrench problems, the experience of our expert designers is at your service.

VICTOR RING TRAVELER CO.

ATLANTA
1733 Inverness Ave., N.E.
Tel. Vernon 2330

GASTONIA
173 W. Franklin Ave.
Tel. 247

VICTOR
Ring Travelers

STANDARD SILICATES

KIER BOILING

For better whites and level results, use a pound of STANDARD Grade 40 Silicate with each 3 to 5 lbs. of caustic in your kier boiling formula. Troublesome stains are eliminated and scarce chlorine is saved.

Ask the STANDARD service staff about grey sour-silicate kier boiling procedure for better whites with less bleach.

ALKALI

DIAMOND
ALKALI COMPANY
STANDARD SILICATE DIVISION
GENERAL OFFICES: PITTSBURGH, PENNSYLVANIA
Plants at CINCINNATI · JERSEY CITY · LOCKPORT, N. Y.
MARSEILLES, ILL. · DALLAS, TEXAS

GLYCERIN

is rationed. If you are a user of glycerin as a hygroscopic agent, you should try our new

CORPOLIN

which is almost twice as effective as glycerin. It is a heavy, colorless and odorless liquid, neutral, non-volatile and non-inflammable. It is

AVAILABLE

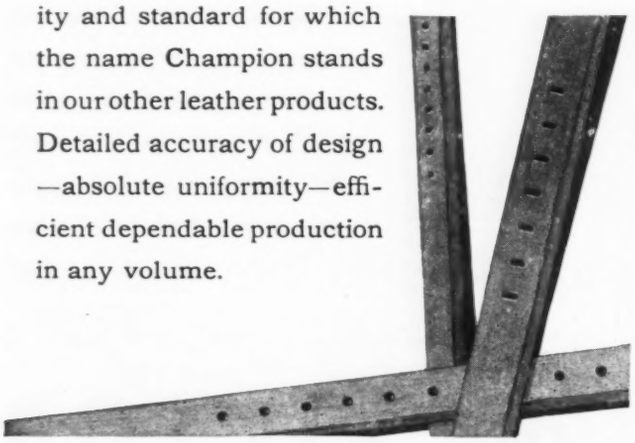
without preference rating. Makes gums swell, exerts smoothing effect on starch paste, prevents gelatine and glue from gelatinizing.

THE AKTIVIN CORPORATION
50 Union Square, New York, N.Y.

LOOM STRAPPING

Champion Quality

The CHAMPION Textile Leather line includes loom-strapping of the same quality and standard for which the name Champion stands in our other leather products. Detailed accuracy of design—absolute uniformity—efficient dependable production in any volume.



W. D. DODENHOFF COMPANY
619 RUTHERFORD STREET
GREENVILLE, SOUTH CAROLINA

ADVERTISER'S INDEX

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A

Abbott Machine Co. ..... *
Aberfoyle Mfg. Co. 129
Abington Textile Machinery Works ..... *
Aktivin Corp. 154
Albi Chemical Corp. ..... *
Aldrich Machine Works 32
Allis Co., Louis .....35 and 36
Allis Chalmers Mfg. Co. 18
Aluminum Co. of America 45
Amalgamated Chemical Corp... *
American Air Filter Co. .... *
American Aniline Products, Inc. 115
American Cyanamid & Chemical Corp. 10
American Hotel Association ..146
American Leather Belting Asso. 142
American Magnesium Corp. .. *
American Moistening Co. ... *
American Monorail Co. 52
American Paper Tube Co. ...156
American Viscose Corp. 47
American Yarn and Processing Co. 119
Arguto Oilless Bearing Co....146
Aridye Corporation ..... *
Arkansas Company, Inc. 21
Armstrong Cork Co. 91
Arnold, Hoffman & Co., Inc... 6
Ashworth Bros., Inc. ..... *
Atlanta Envelope Co. 139
Atlanta Paper Co. 105
Atlas Electric Devices Co. ...141
Atwood Machine Co. ..... *
Avondale Mills 137

B

Barber Colman Co. 95
Barkley Machine Works 144
Barnes Textile Associates, Inc. *
Best & Co., Edward H. 148
Blackmer Pump Co. 139
Blickman, Inc., S. ..... *
Bond Co., Charles 145
Borne, Scrymser Co. 143
Bowen-Hunter Bobbin Co. ... *
Brinton Co., H. 137
Bunting Brass & Bronze Co...147
Burkart-Schier Chemical Co... 96
Butterworth & Sons Co., H. W. .....80 and 81

C

Calco Chemical Division ..... *
Cameron Machine Co. ..... *
Carter, Inc., A. B. 141
Celotex Corporation 85
Chapman Transmission Corp...143
Charlotte Leather Belting Co.. *
Ciba Company ..... *
Classified Ads 152
Cleveland Tramrail Division.. *
Cling-Surface Co. ..... *
Clinton Co. 102
Cocker Machine & Foundry Co. *
Cole Mfg. Co., R. D. 144
Colgate-Palmolive-Peet Co. ... *
Commercial Factors Corp. ... .Inside Front Cover
Conco Engineering Works ... *
Corn Products Sales Co. .... *
Cotton-Textile Institute ..... *
Crompton & Knowles Loom Works 31
Curtis & Marble Machine Co...155
Cutler, Roger W. ..... *

D

Daniels, Inc., C. R. 139
Darnell Corp., Ltd. 139
Dary Ring Traveler Co. 142
Dayton Rubber Mfg. Co. 54
Devoe & Raynolds Co., Inc. .. *
Diamond Alkali Co. 153
Dodenhoff Co., W. D. 154
Dommerich & Co., L. F. ..... *
Dow Chemical Co. ..... *
Drake Corporation...Front Cover
Draper Corporation 1
Dronsfield Bros., Ltd. 146
Du Pont de Nemours & Co., Inc. (Dyestuff Division) ... *
Du Pont de Nemours & Co., Inc., E. I., Electrochemicals Dept. ..... *
Du Pont de Nemours & Co., Inc., E. I., Finishes Division *
Du Pont de Nemours & Co., Inc., Gardinol Div. ..... *
Du Pont de Nemours & Co., Inc., Telescoped Textile ... *
Du Pont de Nemours & Co., (Textile Chemicals) ..... *

E

Eaton & Brown 153
Economy Baler Co. 112
Emmons Loom Harness Co.... 14

F

Fafnir Bearing Co. 26
Fairbanks Company ..... *
Fairbanks, Morse & Co. 40
Fidelity Machine Co. 137
Finnell System, Inc. 28
Fletcher Works ..... *
Foster Machine Co. ..... *
Foxboro Co. 30
Franklin Process Co. ..... *
Fulton Bag & Cotton Mills ... *

G

Gardinol Corp. ..... *
Gastonia Brush Co. ..... *
Gastonia Comber Needling Co..142
Gastonia Roller Flyer & Spindle Co. 146
Gastonia Textile Sheet Metal Works, Inc. 144
Gates Rubber Co. 16
Gaylord Container Corp. ..... *
General Coal Co. ..... *
General Dyestuff Corp. 17
General Electric Co. (Air Conditioning) 38
General Electric Co. (Lamps). 24
General Electric Co. (Motors). *
Georgia Power Co. 56
Gilmer Co., L. H. 25
Goodyear Tire & Rubber Co... 4
Graton & Knight Co. ..... *
Gulf Oil Corporation 12

H

H & B American Machine Co.. *
Hart Products Corp. ..... *
Henderson Foundry & Mch. Co. 151
Hermas Machine Co. ..... *
Hinde & Dauch Paper Co..... 83
Hotel Atlanta Biltmore 150
Hotel Philadelphian 150
Houghton & Co., E. F. 27
Howard Bros. Mfg. Co. 44

ADVERTISER'S INDEX

The Advertisers' Index is published as a convenience and not as a part of the advertising contract. Every care will be taken to index correctly. No allowance will be made for errors or failure to insert.

I
Industrial Rayon Corp. 19

J
Jenkins Metal Shop ..... *
Johnson Bronze Co. 89
Johnson & Son, Inc., S. C....147
Johnson Corp. ..... *

K
Kali Mfg. Co. 144
Kaumagraph Co. 87
Kearny Mfg. Co., Inc. 112
Keever tSarch Co. 109

L
Lambeth Rope Corp. 7
Lane & Bros., Inc., W. T. ...141
Laurel Soap Mfg. Co. 139
Lawlor Co., S. C. 142
Lazenby & Co., Inc., F. A. ... *
Loper Co., Ralph E. 146
Lunkenheimer Co. 34

M
MacBeth Daylighting Corp. .. 41
Manhattan Rubber Mfg. Division 142
Maple Flooring Manufacturers Asso. 93
Marlin-Rockwell Corp. ..... *
Meadows Mfg. Co. ..... *
Meese, Inc. ..... *
Merrow Machine Co. 151
Morton Machine Works ..... *

N
National Cotton Council of America ..... *
National Drying Machinery Co., Inc. 149
National Oil Products Co. ... 51
National Ring Traveler Co. ..112
National Starch Products, Inc. *
New York & New Jersey Lubricant Co. 110
North, Inc., Frank G. ..... *

O
Old Dominion Box Co. 37
Onyx Oil & Chemical Co. 145

P
Pabst Sales Company ..... *
Parks-Cramer Company 93
Pawtucket Spinning Ring Co.. *
Penick & Ford, Ltd., Inc. 149
Pennsylvania Salt Mfg. Co.... 43
Pioneer Atlanta Co. 150
Proctor & Schwartz, Inc. 153
Protective Life Insurance Co. 20

R
Railway Express Agency, Inc.. *
Raymond Service, Inc., Charles P. 152
Redman Card Clothing Co....142
Red Ray Mfg. Co. 150
Reeves Pulley Co. ..... *
Reliance Electric & Engineering Co.....Inside Back Cover
Rhoads & Sons, J. E. 109
Robert & Co. ..... *
Robbins Flooring Co. 112
Rockwood Mfg. Co. ..... *
Rohm & Haas Co. 79
Roy & Son Co., B. S. 146
Royce Chemical Co....Back Cover

S
Saco-Lowell Shops 9
Sandoz Chemical Works, Inc... *
Schieren Co., Chas. A. 88
Scholler Bros., Inc. 137
Scott & Williams, Inc. 116
Selig Company 140
Seydel, Woolley & Co. ..... *
Shingle & Gibb Leather Co....111
Showalter Co., A. J. 148
Sinclair Refining Co., Inc. 8
Singer Sewing Machine Co.... *
Sirrine & Co., J. E. 144
Sjostrom Machine Co. ..... *
S. K. F. Industries, Inc. ..... *
Socony-Vacuum Oil Co., Inc... *
Solvay Sales Corp. 140
Sonoco Products Co. 99
Southern Belting Co. 33
Staley Mfg. Co., A. E. ..... *
Standard-Coosa-Thatcher Co... *
Standard Pressed Steel Co. ... 46
Steel Heddle Mfg. Co. 42
Stein, Hall & Co., Inc. ..... *
Stewart Iron Works Co., Inc..140
Stewart Machine Co., Inc. ...112

T
Taylor Instrument Companies. 49
Tennessee Eastman Corp. ... 39
Terrell Machine Co. 143
Texas Co. 2
Textile Apron Co. 149
Textile Banking Co. 107
Textile Industry Research, Inc..144
Textile Machine Works .....120 and 121
Thomas & Skinner Steel Products Co. ..... *
Tide-Water Associated Oil Co.. *
Tidewater Equipment & Mchry. Corp. 152
Torrington Co. .....131 and 132
Treasury Dept. 50
Truscon Laboratories ..... *
Trust Company of Georgia ... 77
Tubize-Chatillon Corp. ..... *

U
U S Bobbin & Shuttle Co..... *
U. S. O. Committee 48
U. S. Ring Traveler Co..22 and 23
United States Testing Co., Inc. 102
Universal Winding Co. 11

V
Veeder-Root, Inc. ..... *
Victor Ring Traveler Co. 153
Victoria Paper Mills Co. 140

W
Walker Mfg. Co. 111
Wallerstein Co., Inc. 151
Want Ads 152
Warner Chemical Co. 3
Warwick Chemical Co. 13
Watson Williams Mfg. Co. ... *
West Point Foundry & Mch. Co. 97
Westinghouse Electric & Mfg. Co. (Motors) 29
Westinghouse Electric & Mfg. Co. (Precipitron Division).. *
Westvaco Chlorine Products Corp. 3
Whitin Machine Works 5
Whitinsville Spinning Ring Co..155
Wicaco Machine Corp. ..... *
Wildman Mfg. Co. 125
Willcox & Gibbs Sewing Machine Co. 127
Wolf & Co., Jacques 15

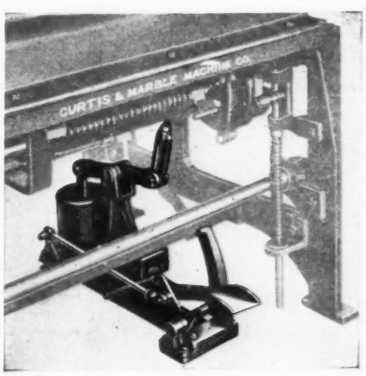
70 coming up!

Our 70th year comes at a crucial time in the world's history. We're glad we've stuck to "Rings Exclusively" because that fact has forced us to do an extra good job to stay in business and grow. As a result, in this time of great urgency, the Textile Industry is able to obtain DIAMOND FINISH rings which are literally setting new records for high-production operation.

We make all types of Holders

WHITINSVILLE (MASS.)
SPINNING RING CO.
DIAMOND FINISH
Makers of Spinning and Twister Rings since 1873

LEWIS AIR LIFT



for use on FOLDING MACHINES

WITH WOMEN increasingly replacing men as folding machine operators, textile mills and finishing plants are faced with the problem of making their mechanical equipment easier to operate, as well as keeping it at top-notch efficiency to meet the present challenge of production.

The Lewis Pneumatic Table-Lift eliminates the conventional foot treadle and the heavy work of raising the folding machine table by foot. This is especially hard on folders of larger than 4 or 5 inch capacity.

This Lift is operated by compressed air, usually available in mills and finishing plants—where not available a compressor can be supplied.

Ask Us More About It!

Curtis & Marble
MACHINE COMPANY
WORCESTER, MASSACHUSETTS
Branch Offices: NEW YORK · PHILADELPHIA · GREENVILLE, S. C.

"FRANK, LET'S GIVE A.P.T. YARN CARRIERS A TRY!"

1 DECISION - 14 BENEFITS

A. P. T. Yarn Carriers are made of layers of tough paper wound and glued together around a former. Thus "built around the hole" they are always concentric with the spindle. They are also impregnated for water repellency and hardened by baking. These features result in the following benefits to users:—

1. Perfect Balance, reducing vibration with resultant wear.

2. Resist Distortion from changes in humidity and temperature, including normal steaming.

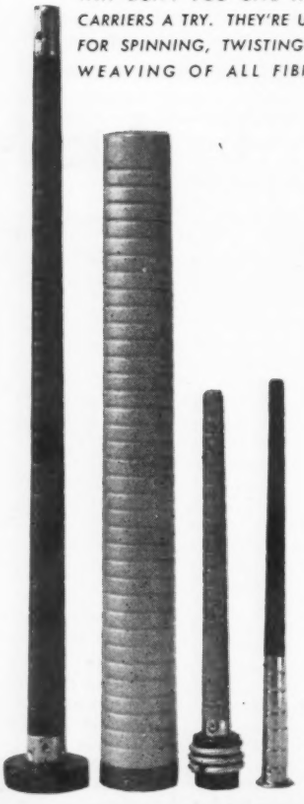
3. No Splinters. Smooth, hard surface does not catch the yarn.

4. Free But Controlled Delivery, — a natural result of smooth, hard surface, deep, well rounded corrugations and freedom from distortion.

5. Seldom Chip or Split, due to "built up" construction.

6. Perfect Spindle Cling (due to resiliency), which eliminates slippage and reduces spindle wear.

*WHY DON'T **YOU** GIVE THESE CARRIERS A TRY. THEY'RE USED FOR SPINNING, TWISTING OR WEAVING OF ALL FIBRES.*



7. Resiliency. Even if bent by abusive handling, will usually straighten out on spindle.

8. Light Weight, which sometimes saves power.

9. Great Strength in proportion to weight.

10. Long Life, due to strength and resistance to distortion, splintering, etc.

11. No Static, which is often an important consideration.

12. Larger Capacity in some cases, due to comparatively thin walls and small diameters (if desired).

13. Yarn Protection, due to absence of splinters and rough spots.

14. Ultimate Low Cost, due to operating economies, long life, etc.

A.P.T. TUBES · QUILLS AND BOBBINS · *They're Built Around the Hole*

AMERICAN PAPER TUBE COMPANY

ESTABLISHED 1898 . . . WOONSOCKET, RHODE ISLAND

SALES REPRESENTATIVES: M. Bradford Hodges, 161 Spring St., N. W., Atlanta, Ga.; W. J. Westaway Co., Ltd., Hamilton, Ont., Canada.

Still More Answers to WHO IS DOING WHAT *with*

AN ALL-ELECTRIC ADJUSTABLE-SPEED DRIVE for A-C. CIRCUITS

RELIANCE V★S DRIVE

Speed Ranges up to 16 to 1
Sizes — 1 to 30 hp.

1 SPEED CONTROL CONVENIENCE WITHOUT LIMITATIONS. Place speed-changer and start-stop button at any convenient point to which a wire can be run. Control is within easy reach.

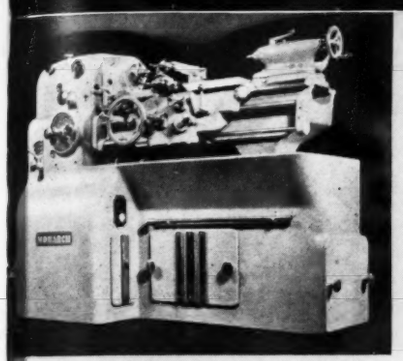
2 DIRECT DRIVE. Lower cost, because fewer parts (no intermediate speed-changing device). Power is closer to where it is needed. Use less space. Streamline your machine design.

3 FROM A-C. POWER SUPPLY. The "packaged" V★S Speed Control Unit brings you important advantages at a new low price. Mount it anywhere. Simply connect it by three wires to a 3-phase a-c. circuit.

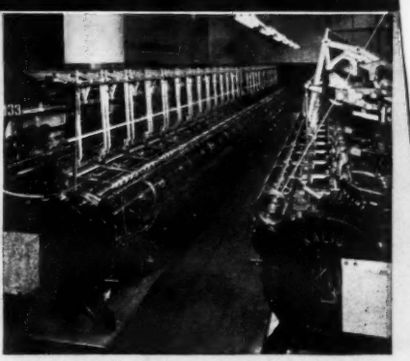
Other Production Aids: Quick stopping, reversing, speed-setting, safe speeds for threading, ample starting torque with smooth acceleration.

Get Bulletin 310 for details

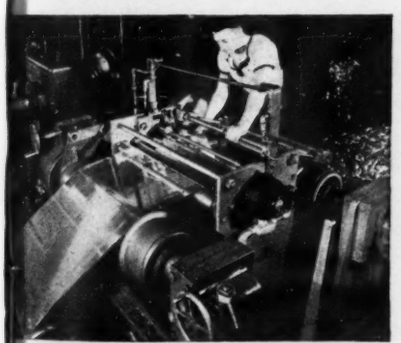
RELIANCE ELECTRIC & ENGINEERING CO.
1082 IVANHOE ROAD • • CLEVELAND, OHIO
Sales Offices in Principal Cities



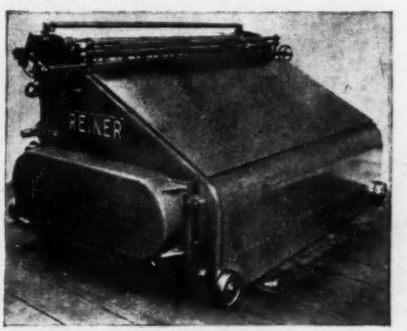
TOOL ROOM LATHE—A machine-tool maker designed a new 10-inch all-electric precision lathe with all elements of the Reliance V★S Drive built in as integral parts of the machine. Provides a smooth range of spindle speeds from 5 to 2500 r.p.m. indicated by a magnetic type tachometer on front of lathe headstock.



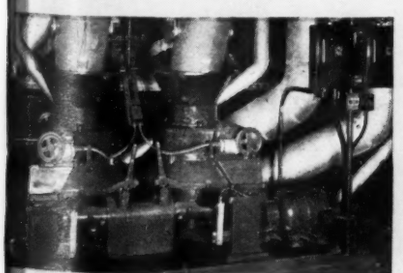
HOSIERY MACHINE—The Reliance V★S Drive for this full-fashioned hosiery machine is arranged for "program" control. Separate speed control handles are set to suit five different operations; speeds change automatically as each operation is finished.



FOIL WINDER—A producer of aluminum foil gets smooth acceleration from a low threading speed to the top operating speed with a 5 hp. 148-1150 r. p. m. Reliance V★S Drive. Fewer breaks when winding mean more production.

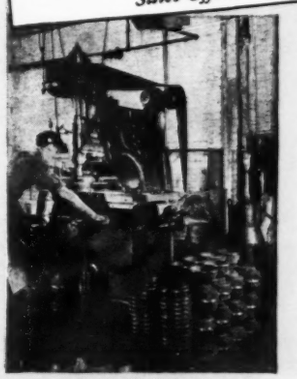


BEAMING MACHINE—A textile machinery builder made use of the V★S Drive to design a beamer on an entirely new principle. All elements of the Drive are enclosed within the machine. Provides stepless speed range from 50 to 1000 yards a minute; slow starting speeds; quick stopping.

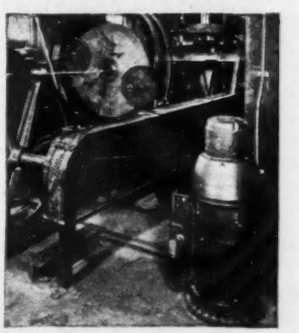


STOKERS—V★S Drives are readily combined with instruments regulating temperatures and pressures so that speeds change automatically. The drives on these coal feeders change their pace as required to keep steam pressure constant.

BODY-CHASSIS ASSEMBLY—An automobile plant synchronizes the travel of body and chassis assembly lines by using Reliance V★S Drives. An operator, seated where the lines join, speeds up or slows down the overhead body conveyor so that the body can be dropped into place on the chassis.



MILLING MACHINE—A machinery builder put new life into an old milling machine by applying a 7½ hp. V★S Drive. With more power, a wider range of milling speeds and more convenient control the machine has become a bigger producer.



CABLE FORMING and WRAPPING—A V★S Drive replaced the system of gears and pinions formerly used to obtain speed changes for the taping head on this cable-forming and wrapping machine. Now, no time is lost in changing speeds. Product is more uniform.

RELIANCE ELECTRIC & ENGINEERING CO. • 1088 Ivanhoe Road, Cleveland, Ohio

BIRMINGHAM • BOSTON • BUFFALO • CHICAGO • CINCINNATI • DETROIT • GREENVILLE, S. C. • HOUSTON, TEX. • LOS ANGELES • MINNEAPOLIS
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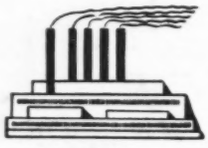
RELIANCE A-C D-C MOTORS

TIME WON'T WAIT-

SPEED UP YOUR GOVERNMENT ORDERS WITH

VATROLITE*



Leading textile mills have been using Vatrolite on Army and Navy cloth since 1939. Today, over 75% of the production of this time-tested reducing agent is going into government work.

Here's why. Vatrolite has a uniform, *granular* structure. It keeps "dusting" down to a minimum. That means less wheezing and coughing on the job . . . better, more efficient working conditions . . . fewer man hours lost in filling those vital Army and Navy contracts!

Vatrolite measures up to rigid government specifications to the letter. Always full-strength and highly stable, it assures you of *exacting results* in vat dyeing . . . longer, bigger runs. (Another *plus* when it comes to speed!) What's more, Vatrolite is an ideal "stripping" agent for cotton and rayon . . . strips colors from defective materials or reworked goods quickly, efficiently. Write today for details.

*Sodium Hydrosulphite Concentrated

ROYCE CHEMICAL COMPANY

CARLTON HILL, NEW JERSEY

MANUFACTURERS OF SULPHONATED OILS INCLUDING VELV-O-RAY*, CASTROLITE*, AND HYDROSULPHITES INCLUDING PAROLITE*, VATROLITE*, DISCOLITE*
*Reg. U. S. Pat. Off.